An Address
ON
THE DIAGNOSIS AND TREATMENT OF THE VARIOUS FORMS OF GOITRE.

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MR. PRESIDENT AND GENTLEMEN,—All of us are brought at times into contact with cases of goitre and although in most instances the disease presents little or no difficulty as regards either diagnosis or treatment, yet occasionally we meet with cases that present the greatest difficulties in both respects. An accurate diagnosis of the exact nature of a goitre is essential before a correct opinion can be expressed as to prognosis and to the treatment that should be recommended. No one who has seen a very early case of malignant disease of the thyroid can doubt that diagnosis may occasionally present great difficulties. No one who is suddenly brought face to face in the middle of the night with the patient suffering from acute suffocating goitre can doubt that efficient treatment is not always so easy as we should like it to be. No one who has had to remove a deeply-seated goitre from behind the sternum of a patient who is in imminent danger of suffocation can doubt that the operative difficulties of thyroid surgery may be very considerable. All these have happened to myself and, I doubt not, to many of you, and any or all of them may happen to any of us.

For purposes of discussion I propose to divide all thyroid swellings into four groups—(1) parenchymatous (bilateral) goitre; (2) encapsuled tumours (solid and cystic); (3) exophthalmic goitre; and (4) malignant disease—and to discuss each of them separately as regards both diagnosis and treatment.

I.—PARENCHYMATOUS (BILATERAL) GOITRE.

The parenchymatous goitre, the common goitre of young people, is a disease of the whole gland and therefore it affects all parts equally. It causes a bilateral uniform swelling, the thyroid nature of which rarely admits of any doubt. Its situation, its shape—preserving as it does the horseshoe shape of the normal gland—and the fact that it moves with the larynx on deglutition, prevent it from being mistaken for any non-thyroidal swelling. The only other thyroid swelling that presents all these characters is the goitre of Graves's disease (of which I shall speak presently) and certain very rare forms of inflammation and of malignant disease. Both of the latter usually have very distinct characters of their own. If the parenchymatous enlargement, however, be extremely slight it may be a little difficult to detect, especially if the patient be at all fat. The best method of detecting very slight enlargements of the gland is to place the finger and thumb on either side of the lower part of the larynx and to direct the patient to swallow. As the larynx rises it draws the thyroid gland upwards between the finger and thumb, which are thus enabled to judge of its exact size. Occasionally a thyroid gland is pushed forwards by some swelling behind it and may thus appear to be enlarged when it is not really so. Thus a few months ago a middle-aged woman was sent to me on account of a slight swelling at the lower part of the front of the neck; it had been noticed for several months and was supposed to be a small goitre. There was also a history of dysphagia. On examination the thyroid gland was found to form a well-marked, visible, and easily palpable swelling which moved on swallowing, but further investigation showed that behind the thyroid was a much deeper swelling which did not move on deglutition and which had displaced forwards the thyroid gland itself. It was a carcinomatous tumour of the pharynx and œsophagus, easily recognised by its extreme hardness and by examination of the interior of the throat.

A parenchymatous goitre is usually soft, but it is well to remember that it may also be exceedingly hard, so hard as to lead to mistakes in diagnosis. This hardness may be due in young adults to mere excess of thyroid secretion, which fills up all the vesicles so tensely as to cause the whole gland to feel like a piece of wood. This kind of goitre is often associated with very severe dyspnœa and therefore it is well to remember that energetic treatment with iodine or thyroid extract will usually cause absorption of some of the secretion, softening of the gland, and relief from the dyspnœa.

Parenchymatous goitres tend as they become old to undergo various secondary changes, one of the most important of which is fibrosis. The connective tissue between the vesicles develops at the expense of the latter. This process may extend so far that eventually the whole gland presents little more than a mass of fibrous tissue. This extreme degree of fibrosis is, however, rare and is, I believe, never met with except in elderly people. Goitres in young people, however hard, are never composed to any large extent of fibrous tissue. I have often seen hard bilateral goitres in young people which had been diagnosed as "fibrous" but they have invariably proved to be parenchymatous goitres tensely filled with secretion.

The most extreme degree of hardness is met with in those goitres which have actually become calcified. Fig. 1 shows

FIG. 1.

An old goitre from a woman, aged 87 years, who died from sarcoma of the skull. It is composed chiefly of fibrous tissue with considerable areas of calcification. Reduced two-thirds. (Royal Free Hospital Museum. From a photograph by Miss M. D. French.)

a goitre from a woman, 87 years of age. It is composed mainly of fibrous tissue and in it are large areas of calcification.

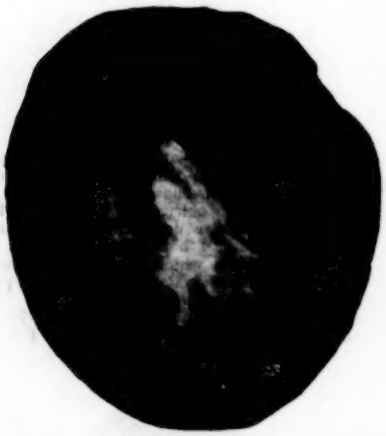
II.—ENCAPSULED TUMOURS (SOLID AND CYSTIC).

I come now to the second class of thyroid swellings—that of encapsuled tumours, solid or cystic. This is an extremely common form of goitre and certainly one of the most important from the surgical point of view, since it is that which is most amenable to surgical treatment. A very large proportion of the common goitres that we see in Switzerland, in Derbyshire, in Devonshire, and elsewhere consist wholly or partly of encapsuled tumours, adenomata which have developed in the substance of the gland. They may be compared to the common adenomata of the breast or to the encapsuled fibroids of the uterus. These thyroid adenomata, composed at first of tissue closely resembling that of the thyroid gland in which they lie, have a remarkable tendency to undergo secondary changes. They tend, on the other hand, to soften and to break down in the centre. The solid portions gradually melt away and disappear until the original solid adenoma has become converted into a cyst. On the inner wall of such a cyst traces of the original solid adenoma may often be seen adhering. Such is the origin of the vast majority of thyroid cysts, although it must be admitted that a small minority of them probably originate in another way and are not derived from pre-existing adenomata.

Another very common secondary change that is found in thyroid adenomata is fibrosis, the tumour being gradually converted into a mass of fibrous tissue, in the meshes of which are buried the remains of the glandular elements. If an old adenoma from a middle-aged or elderly person be examined it will often be found to contain in its centre a star-shaped mass of dense fibrous tissue (see

Fig. 2). This fibrosis, beginning in the centre, gradually extends until more or less of the whole tumour has been converted into a dense, hard mass.

FIG. 2.



A solid adenoma of the thyroid, showing fibrosis commencing in the centre. From a woman, aged 42 years. Reduced five-sevenths. (Royal Free Hospital Museum. From a photograph by Miss M. D. French.)

It is well to remember that these hard fibrous adenomata containing small collections of epithelial cells present under the microscope some superficial resemblance to a carcinoma and I have more than once known perfectly innocent tumours of this kind described erroneously as malignant tumours and even published as such.

The diagnosis of a thyroid adenoma is usually a very simple matter, provided that the tumour is single and of sufficient size to be seen and felt. A swelling which is strictly unilateral, involving one or other lateral lobe exclusively, and which is not inflammatory or malignant, must, with certain very rare exceptions, be an encapsuled tumour, either cystic or solid—one, therefore, that is capable of removal by the operation of enucleation. The diagnosis between cystic and solid encapsuled tumours is often a matter of great difficulty, although generally not one of much practical importance, since the treatment is much the same in both. A tense cyst or a cyst with hard fibrous walls may be as hard as the very hardest solid adenoma. On the other hand, I have occasionally known surgeons of large experience to make a diagnosis of thyroid cyst from the extreme softness and apparent fluctuation, and to find at the operation that the tumour was solid throughout. He is a bold, and I venture to think a rash, surgeon who ventures to state definitely after physical examination of an encapsuled thyroid tumour that it is exclusively either solid or fluid.

Many unilateral thyroid tumours springing from the lower part of one lateral lobe, the commonest seat of thyroid tumours, tend, as they grow, to displace the trachea to the opposite side and to occupy themselves a situation in the middle line of the neck. Tumours in this situation, if small, may easily be mistaken for tumours of the isthmus itself, which are very rare. If large and occupying a considerable portion of the neck they may easily simulate bilateral parenchymatous goitres. They can be distinguished, however, by careful observation of the exact position of the trachea and larynx. The strictly parenchymatous goitre never displaces these organs from the middle line. The encapsuled tumour, springing from one or other lobe, always displaces them to a greater or less extent towards the opposite side. The rare tumour of the isthmus does not displace the trachea but as it necessarily forms a rounded prominent swelling, not involving the lateral lobes, there is little or no difficulty in its diagnosis.

A further point of distinction between large encapsuled tumours situated in the middle line of the neck and parenchymatous goitres is to be found in examining the upper border of the swelling. The encapsuled tumour has, of course, a convex upper border; the parenchymatous goitre presents a notch or depression marking the interval between the two lateral lobes.

Mixed forms.—Hitherto I have been speaking either of the purely parenchymatous goitre or of the single adenoma. The difficulties of exact diagnosis are very much increased when we come to that very common form of goitre in which one or more adenomata exist in an otherwise parenchymatous goitre, or to the equally common form in which the enlargement consists mainly of multiple adenomata, generally on both sides of the neck. It is usually a matter of great importance from the point of view of treatment to be able to say definitely how much of any given goitre consists of encapsuled tumour and how much of parenchymatous enlargement. I have already said that a strictly unilateral goitre is almost invariably an encapsuled tumour; I may go further and say that it is almost certain to consist of a single tumour, for multiple tumours affecting one lobe only of the gland, the opposite being quite healthy, are very seldom seen. Multiple tumours almost always affect both lobes of the gland, although generally to a different extent. Occasionally two tumours of the same size will occur in the two lobes, one on either side, and the resemblance then to a parenchymatous goitre may be considerable. The diagnosis must then be made chiefly by the shape of the swelling. The lobe that is enlarged by parenchymatous hypertrophy preserves its pyriform shape with the narrow end upwards. The encapsuled tumour is globular or perhaps oval, never strictly pyriform. It is frequently possible to detect at the upper and back part of the tumour a little conical process, the remainder of the lateral lobe, and this at once gives a clue to the nature of the case. But strictly symmetrical bilateral thyroid tumours are very rare. The common case is that in which one lobe is *much* larger than the other, and here there is seldom any doubt as to the existence of at least one encapsuled tumour.

Goitres are sometimes composed of a large number of adenomata or cysts, of comparatively small size, embedded in an otherwise parenchymatous goitre like plums in a plum pudding. If the parenchymatous matrix is small in amount the tumours may easily be felt; but sometimes they are deeply buried in a large mass of parenchymatous tissue. In the latter case, however, their diagnosis is not a matter of much importance, as the case will probably have to be treated as if it were one of pure parenchymatous enlargement. And here I should like to offer a word of warning and to say that a purely parenchymatous goitre occasionally presents a distinctly lobulated appearance. This may suggest that it is composed of a number of small tumours massed together when really there are no encapsuled tumours at all.

If the surgeon is in doubt as to the diagnosis between a parenchymatous and an adenomatous or cystic goitre and is proposing to operate upon it he will do well, if the case is not so urgent as to demand immediate operation, to administer iodine or thyroid extract for a few weeks. The parenchymatous goitre or portion of the goitre will probably under this treatment diminish in size, or at least become much softer. The tumours will be unaffected and, if embedded in parenchymatous tissue, will become relatively more evident as the parenchymatous tissue around them shrinks. Indeed, before undertaking the enucleation of any thyroid tumour a course of such medical treatment is often advisable, as the tumour is thereby loosened and its enucleation is facilitated.

III.—EXOPHTHALMIC GOITRE.

Of the remarkable disease known as exophthalmic goitre I need say but little on the present occasion. It is a subject that concerns the physician rather than the surgeon. Structurally this form of goitre differs widely from all others, presenting to the naked eye a firm, homogeneous appearance on section, with no visible vesicles and with little or no colloid. The absence of any vesicular or cystic structure and the absence of encapsuled adenomata serve to explain the fact that exophthalmic goitre rarely attains a large size and rarely causes serious tracheal narrowing. Microscopically it is composed almost wholly of proliferating thyroid epithelium. The diagnosis of a well-marked case presents no difficulties at all. In the very early stages, however, before the exophthalmos has become a noticeable feature, the goitre of Graves's disease may easily be mistaken for a simple parenchymatous one. It is very important not to make this mistake if any question of operation is under consideration. The removal of an exophthalmic goitre by operation is undoubtedly a far more

serious matter than the removal of a parenchymatous goitre. Indeed, the circumstances which would justify such an operation are in my opinion exceptional. The diagnosis in the absence of exophthalmos should depend, I venture to think, more upon the general symptoms than upon the local characters of the goitre. The nervous fidgety manner of the patient, her restlessness and excitability, the moist skin, besides minor symptoms such as diarrhœa and local pigmentation, are of much value in the diagnosis. The nervous symptoms generally form a marked contrast to the usually rather dull and apathetic manner of a patient who is the subject of parenchymatous goitre. The persistently rapid pulse is, of course, a symptom of the greatest importance and if present with a uniform enlargement of the thyroid should always raise a strong suspicion of Graves's disease. Mere rapidity of pulse is not enough, however, for the establishment of the diagnosis in all cases, especially if the goitre be unilateral and deeply seated in the neck behind the clavicle or sternum. Goitres in this region are not infrequently accompanied by a somewhat rapid pulse. On several occasions on account of dyspnœa I have had to operate upon such cases in which an erroneous diagnosis of Graves's disease had previously been made by others, mainly on the ground of rapidity of the pulse. Conversely it is well to remember that Graves's disease may become superadded to a previously simple form of goitre, and although the goitre of a *pure* case of Graves's disease presents always a symmetrical enlargement of all parts of the gland, yet a previously existing cyst or adenoma in one lobe may cause the goitre to assume a markedly asymmetrical shape and perhaps thus lead to an error in diagnosis.

IV.—MALIGNANT DISEASE.

Malignant disease in a well-marked form when the growth has already penetrated the capsule of the thyroid gland does not usually present any great difficulty in diagnosis. The age of the patient, the rapid and steady growth of the tumour, its hardness, its irregular surface, its fixity, its tendency to infiltrate surrounding parts and to involve the recurrent laryngeal nerve, the carotid artery, the trachea, and the œsophagus, are common characteristics which leave but little room for doubt as to the diagnosis. At this stage, however, surgical treatment other than palliative is quite hopeless. If we are to do anything towards curing this terrible disease the diagnosis must be made early, while the disease is still confined within the gland, while there is still a possibility of complete removal of the tumour by a thorough operation. I will limit my remarks, then, to the diagnosis of the disease in this early stage.

In the first place malignant disease of the thyroid seldom occurs before the age of 40 years. The youngest patient who has come under my notice was a man, aged 25 years. But his was a very unusual case. A definite rule may be laid down that *when in the thyroid gland of a person over 40 years of age a tumour appears which is hard, which steadily and rapidly increases in size, and which is not of an inflammatory nature, the malignancy of such a tumour should be strongly suspected.* If, moreover, the surface of the tumour is irregular and bossy and if there is likewise dysphagia and pain in the neck, shooting up to the side of the head or to the shoulder, then the diagnosis is strongly confirmed. But there are several common innocent tumours of the thyroid which may simulate malignant disease. A simple cyst hitherto unnoticed may, from extravasation of blood or from inflammatory secretion into its interior, suddenly appear as a small hard lump. Not uncommonly such cysts cause at first a good deal of pain which adds to the difficulty of diagnosis. The roundness of the tumour and the smoothness of its surface are, however, the characters which will usually suffice for the diagnosis of a cyst. A cyst of this kind, moreover, does not steadily increase in size. It attains its full size in a few hours or in a day or two and afterwards either remains stationary or at most increases in size but very slowly. A very hard, intensely hard, nodular tumour may be found in the lower part of the thyroid of a person who says that he has only been aware of its existence for a few days. Such a tumour is probably an old calcified or fibroid nodule which has really existed for years but owing to its small size and deep situation has escaped notice. Many such cases have come under my observation. If there is any doubt as to its possible malignant nature a delay of a few days will show that the tumour is not increasing in size. Its free mobility will probably also point to the innocency of its nature.

There is a curious form of chronic painless inflammation of the thyroid which is not very uncommon in elderly women and which may be very difficult to distinguish from a slowly growing form of malignant disease unless an exploratory operation has been performed. Even after removal of the tumour and examination by the microscope the diagnosis is not always very clear. I have little doubt that some of the cases reported in literature as round-celled sarcoma of the thyroid are really of this nature.

Malignant disease of the thyroid, as I have said, is almost always characterised by its hardness, but there is a rare form of sarcoma which is quite soft and is likely to be mistaken for a cyst, an abscess, or an extravasation of blood. The steady and rapid growth and the nodularity of the tumour are the most characteristic diagnostic features.

There are two somewhat rare forms of malignant disease of the thyroid which stand somewhat apart from the ordinary sarcoma and carcinoma and which run a much slower and less malignant course. One is the papilliferous cystic tumour, characterised microscopically by the presence of numerous delicate papillary intra-cystic growths. These tumours are analogous to the papilliferous tumours of the ovary. They have a great tendency to recur *in situ* and but little tendency to disseminate. Their clinical course often extends over many years and they are extremely suitable for operation, even when they have already attained a considerable size. Mr. Arthur Barker has published a case of this kind in which the total duration of the disease was not less than 18 years. The first operation for the removal of the tumour was performed 10 years before the death of the patient. Another unusual form of malignant disease is that which is commonly known by the objectionable term of "malignant adenoma." By this term is meant a tumour which at first sight, and even after careful microscopical examination, appears to be innocent but which nevertheless is found to reproduce itself in distant parts of the body. The secondary tumours frequently present a very close resemblance in structure to that of the normal thyroid gland. I do not propose to enter now at any length into a discussion of this most interesting group of tumours. It includes several distinct forms. In some cases undoubtedly both the primary and the secondary tumours are to be regarded as malignant and it is well to remember that there is nothing unreasonable in supposing that the epithelium of a secondary growth can preserve both the characters and the functions of the epithelium of the gland whence it primarily came. Thus thyroid epithelium preserves the property of secreting colloid material whether it is in the thyroid gland or in a distant secondary tumour. Many of the primary tumours are undoubtedly cases of malignant disease in which the true structure of the tumour has been erroneously described. But there appears to be good reason for believing that some at any rate of the primary tumours have failed to disclose, even after careful microscopical examination by competent observers, any structural evidence of malignancy. The true pathology of this very interesting class of tumours has yet to be thoroughly worked out. At present it seems to me best to regard them all simply as malignant tumours of a peculiar nature.

TREATMENT.

I have devoted most of the time at my disposal to the subject of diagnosis because the appropriate treatment of any given case of goitre must necessarily depend very much upon correct and accurate diagnosis. The principles which guide us in treatment are comparatively simple and their correct application is not difficult provided that our diagnosis is well founded.

In the first place we should look to the cause of the goitre and if the goitre is of the parenchymatous variety and is in an early stage, a good deal may be done for its cure by removing that cause. There is no doubt that a very large proportion of parenchymatous goitres, although not all, are due to the ingestion of a poison contained in the drinking-water. We do not yet know what is the exact nature of that poison although we have abundant proof of the existence of a goitre-producing poison in certain waters. It is but reasonable, then, to inquire into the quality and source of the water that the patient drinks and if possible to substitute for it a purer and better water. But these remarks must be held to apply only to early cases of parenchymatous goitre. In the case of cystic and adenomatous goitres and old parenchymatous ones in which secondary changes, such as fibrosis, have occurred it is

useless to expect benefit from a mere change of water-supply. I do not propose to enter into that most interesting and fascinating subject of the essential cause of goitre, much as I should like to do so.[1]

Drugs in the treatment of goitre.—With regard to the use of drugs in the treatment of goitre it is naturally chiefly in the early stages of the parenchymatous form of the disease that we may expect most benefit from their use. In the case of cysts and of old parenchymatous goitres which have undergone much secondary change they are of little or no value. Encapsuled adenomata are seldom affected by drugs, but I have some reason for believing that very soft adenomata in young people are to a certain extent beneficially influenced by their administration.

The two drugs which stand in the first rank, far above all others, in the medical treatment of goitre are, of course, iodine and thyroid extract and I need do no more than mention them. I need likewise only mention external applications, such as tincture of iodine, which are sometimes useful, especially if applied freely; iodine is absorbed and acts just as if it had been taken internally.

Removal of goitre by operation.—I now come to what is from the surgical point of view the most important method of treatment—namely, removal by operation. I need hardly remind you that operations for the removal of goitre may be divided in the main into two, an extra-capsular operation known as extirpation, and an intra-capsular, or more properly an intra-glandular, operation known as enucleation. In the first the operator keeps outside the capsule of the gland, ties all vessels before they are cut, and, in short, makes a careful, deliberate dissection. He must see exactly what he is doing at each step of the operation and he must take special care not to wound the various important structures, such as the recurrent laryngeal nerve, the jugular vein, &c., which lie in immediate contact with the thyroid gland. In the enucleation operation the surgeon must cut into the gland itself until he comes to the surface of the encapsuled tumour, and then with blunt instruments he proceeds to enucleate the tumour from the glandular bed in which it lies.

Now enucleation is suitable only for encapsuled tumours and it is very important to bear this in mind. In the last few years this operation has become very popular and I notice a tendency in certain quarters to perform it in cases that are not really suitable for it. If properly performed upon a suitable case it is an operation attended by scarcely any risk. But if attempted in an unsuitable case it is by no means free from risk, and especially from risk of hæmorrhage. In enucleation, as ordinarily performed, the tumour is shelled out more or less rapidly, no attempt being made to stop the hæmorrhage until the tumour has been removed. In some of my earlier operations, when I had had but little practice in enucleation, it happened occasionally that a good deal of blood was lost, chiefly from delay in getting the tumour out or from attempting to perform a simple enucleation in cases of very large tumours, which are more suitable, in my opinion, for the modified operation of resection-enucleation. In the latter operation the hæmorrhage is much more under control because most of the main vessels are tied or clamped before the tumour is enucleated. Although I have never in any of my own enucleation operations known hæmorrhage to be so severe as to threaten life, yet I have seen deaths from this cause in the hands of others and have from time to time heard of other such cases. Probably in nearly all these cases the excessive hæmorrhage was due to the enucleation having been attempted in cases in which no enucleable tumour was present, or in which the tumour was so large that it ought to have been dealt with by some modification of the operation such as I have mentioned.

I observe that within the last month the senior surgeon of one of the London hospitals, in some clinical remarks upon a case of goitre, draws attention very rightly to the danger of hæmorrhage during the operation of enucleation. In the course of his remarks about his case, however, he tells us that the patient was a girl, aged 16 years, with an obvious enlargement of the whole gland, one half being larger than the other, and being composed of several nodular masses. He goes on to say that he would have no hesitation in selecting enucleation as the operation to be performed. If this is the kind of case for which enucleation is recommended without hesitation I am not at all surprised that he is impressed by the seriousness of hæmorrhage.

Multiple enucleation adds considerably to the severity of the hæmorrhage if the tumours are at all large. The older the adenoma or cyst the more likely is it to have a tough thick wall, and the more easy will it be therefore to enucleate. I remember on one occasion being able to enucleate an old cyst as large as a goose's egg in a man, aged 64 years, without having to tie a single vessel. But this is very unusual. Solid adenomata in young people, especially if embedded in a considerable amount of parenchymatous goitre, are often difficult to enucleate, as hæmorrhage is apt to be profuse and as the wall of the tumour is frequently very thin and not always easy to recognise. It is often better under these circumstances to do a simple extirpation of one lobe rather than run the risks of an enucleation.

It will be gathered from what has been said that I consider extirpation, or its modifications, resection, or resection-extirpation, to be the proper operation for cases of parenchymatous goitre demanding any operation; for those cases also in which there are many cysts or adenomata distributed throughout the gland it is generally to be preferred to enucleation.

In the great majority of cases of parenchymatous goitre no operation at all is desirable. Either the goitre is amenable to medical treatment or it does not cause sufficient trouble to warrant the performance of so severe an operation as extirpation. For mere deformity I hold that extirpation of a parenchymatous goitre is unjustifiable, except possibly in certain very exceptional cases. It is dyspnœa, and especially increasing dyspnœa, which does not yield to medical treatment, that calls for this operation. The more severe the dyspnœa the more urgently is the operation demanded. In young people serious dyspnœa occasionally supervenes very rapidly. A remarkable case of this kind occurred to me last summer. A girl, aged 14 years, was sent to me by Dr. Herbert Tilley on account of a parenchymatous goitre which had been noticed only three weeks. In spite of energetic medical treatment the dyspnœa had steadily and rapidly increased. A few hours after I first saw her I received an urgent telephone message to say that she was suffocating. On my arrival she was deeply cyanosed and already unconscious. Fortunately, everything had been prepared for operation, so I immediately took up a knife and cut right down upon the goitre as she lay there in bed. Inserting a forefinger behind the left lobe I drew this forcibly forwards so that in less than two minutes from the beginning of the operation the pressure upon the trachea had been relieved. I was then able quietly and deliberately to remove the whole of that lobe and about one half of the opposite one. It was seen that the lateral walls of the trachea were actually in contact, so that the only space available for breathing was a very small chink at the anterior part. The goitre was purely parenchymatous, was about as large as an orange, and was largely substernal. The patient did not regain consciousness until an hour after the operation had been finished. She never moved during the operation and afterwards she told me that she had not the slightest recollection of my arrival or of any operation having been performed. She made a rapid and excellent recovery and when I last saw her, two days ago, she was found to be in perfect health in every respect.

There are two classes of goitre in which dyspnœa is apt to supervene very quickly and to be a very serious danger to life. One is the rapidly-growing goitre of girls and boys at the age of puberty, such as that which I have just described. The other is that in which there is a small deeply-seated swelling, generally an encapsulated tumour, lying behind the clavicle or the sternum. Patients with the latter kind of goitre are almost invariably adults. A swelling in this situation is likely to become suddenly displaced into the upper opening of the thorax and to cause most dangerous dyspnœa. Or such a tumour may suddenly become enlarged from inflammation or more commonly from hæmorrhage into its interior. Several instances of both these occurrences have come under my notice. These tumours are generally easily and most satisfactorily treated by enucleation, however deeply they may be situated.

In enucleation, as in extirpation, it is almost always dyspnœa that calls for the operation; occasionally it is dysphagia, especially in the case of small tumours projecting from the back of the gland and pressing upon the œsophagus and pharynx. For mere deformity it is quite justifiable to perform an enucleation, if the patient desires it, provided that the operator is certain that the operation can be easily performed with little or no risk to life.

Time prevents me from entering at any length into the

[1] I have elsewhere discussed this subject at some length. See "Diseases of the Thyroid Gland and their Surgical Treatment," J. and A. Churchill, 1901, Chapter V.

subject of the surgical treatment of exophthalmic goitre and of malignant disease. With regard to the former I would only say that the cases in which removal of any part of the goitre is advisable must be very exceptional. Occasionally benefit can be obtained from ligature of two or three of the thyroid arteries, but it must be remembered that even this operation is by no means devoid of danger. With regard to the practice of cutting or excising the cervical sympathetic nerve for Graves's disease I look upon it as wholly unjustifiable. Founded upon an entirely erroneous view of the pathology of the disease, uncertain and often most dangerous in its results, it has in my opinion nothing whatever to recommend it.

Malignant disease of the thyroid is seldom seen early enough to permit of any operation for its removal. It must be treated on the general principles that guide us in the treatment of malignant disease elsewhere. If there is a reasonable prospect that the whole of the disease can be removed by an operation that will not kill the patient or leave him after recovery worse than he was before the operation, then it should be undertaken. If it is impossible to remove the disease—and this is generally the case—then something may be done to relieve urgent symptoms, such as dyspnœa, dysphagia, and pain. The surgeon who undertakes to remove a malignant goitre the diagnosis of which is no longer doubtful must be prepared to meet with considerable difficulties. If the removal is to be satisfactorily accomplished he must be prepared to perform, if necessary, some very large operation, including perhaps such a severe proceeding as resection of a portion of the internal jugular vein or carotid artery, or even parts of the trachea or œsophagus. Whether these very extensive operations are really worth doing seems to me very doubtful. On the other hand, the removal of a malignant goitre in its *early* stage while the tumour is still confined within the capsule presents little difficulty and is often a much less serious proceeding than the extirpation of many an innocent goitre.

CONCLUSION.

And now, gentlemen, I must conclude what has been, I fear, a somewhat lengthy address. I trust that I have not seemed to be too dogmatic in what I have ventured to say. I have expressed to you freely my own opinions which I have formed on this subject after an experience which I think I may fairly claim to have been tolerably extensive. You will probably wish to know what the results of my operations have been. Without going into details, I may say, briefly, that the total number of all my operations for the removal of goitre of all kinds is 155. Among the earlier operations, or, to be strictly correct, among the first 46, there were four cases of death. The only death in the last 109 cases was that of a woman who was admitted to the Royal Free Hospital with much cyanosis, a large and partly substernal goitre, and signs of an intrathoracic tumour of uncertain nature. After a consultation with my medical colleagues I performed an exploratory operation and removed the substernal portion of the goitre. The wound ran a normal aseptic course but the dyspnœa and cyanosis were not relieved. When the patient died, rather more than three weeks after the operation, it was found that the dyspnœa was due to a sarcomatous tumour of the root of the lung and mediastinum secondary to a small primary growth of the abdomen. This death is also the only one that has occurred to me after any enucleation operation, the total number of which amounts at the present time to exactly 100.

HEALTH OF HEAVITREE, EXETER.—Dr. J. F. Wolfe, the medical officer of health, in his annual report to the Heavitree Urban District Council states that during 1901, on an estimated population of 7527, there were 130 births registered, equal to a rate of 17·19 per 1000. The total number of deaths was 114, equal to a rate of 15·08 per 1000.

VACCINATION REGULATIONS.—At the meeting of the Helston Board of Guardians held on March 29th a letter was read in which the Local Government Board replying to a communication from the guardians stated that the Board of Guardians had no power to appoint public vaccinators for primary vaccinations only or to pay its public vaccinators lower fees than those fixed by the Vaccination Order of 1898, but if revaccinations were likely to be numerous in the Helston Union the Board had no objection to the appointment of suitable stations for the performance of revaccination and to the payment of half-a-crown to the public vaccinator for each case performed there.

The Milroy Lectures

ON

THE ETIOLOGY OF TYPHOID FEVER AND ITS PREVENTION.

Delivered at the Royal College of Physicians of London on Feb. 20th, 25th, and 27th, 1902,

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LECTURE III.[1] (*concluded*).

Delivered on Feb. 27th, 1902.

I HAVE already stated the opinions of some of the most eminent writers on the subject with regard to the question of the communication of typhoid fever directly from one person to another—that is, through the medium of the air—but I will now proceed to cite some instances in which the disease is evidently spread to a considerable extent by means of direct contagion. Dr. W. Budd in his admirable treatise already referred to gives a long account of an outbreak of the disease which he investigated in the village of North Tawton in Devonshire, where he lived and was in almost exclusive possession of the field as a medical practitioner. In the first place he points out that in this village "privies, pig-sties, and dungheaps continued hour after hour to exhale ill odours without any subsequent effect on the public health" and states that he "ascertained by an inquiry conducted with the most scrupulous care that for 15 years there had been no severe outbreak of the disorder and that for nearly 10 there had been but a single case. For the development of this fever a more specific element was needed than either the swine, the dungheap, or the privies were in the common course of things able to furnish. In the course of time, as was indeed pretty sure to happen, this element was added and it was then found that the conditions which had been without power to *generate* fever had but too great power in promoting its spread when once the germ of fever had been introduced. On July 11th, 1839, the first case of typhoid fever occurred in a poor and crowded dwelling. Before the beginning of November in the same year more than 80 of the inhabitants had suffered from it under my care." He then describes the course of the outbreak, showing quite clearly over and over again that one person contracted the disease from another. Later in his book, after having mentioned some other outbreaks and quoted various authors to prove that the disease is contagious, he refers to North Tawton again as follows: "About two years ago—i.e., in 1873—after an interval of 30 years' almost entire immunity this town was again visited by typhoid fever. Meanwhile a water company had been established by means of which drinking-water, brought from a considerable distance in iron pipes, is delivered under high pressure to every inhabitant. Contamination of this water by human excreta is an absolute impossibility, and yet in these two outbreaks of typhoid the population suffered even more severely than before. In the course of a few months out of a population of 1500 persons 120 were known to have had typhoid fever and 11 of their number died." He considers that in this and in some other epidemics which he describes "the air was the great medium through which the infection passed." His final opinion as to the relative importance of water and air as media for communication of the poison of the disease is stated as follows: "The exact proportion which the cases caused by infected water bear to those caused by infected air is not easy to determine and probably varies much under different conditions of soil, climate, season, water-supply, social habits, and sanitary arrangements. As far as my own experience goes I can state that the worst and most widespread outbreaks which I have ever

[1] Lectures I. and II., and the first portion of Lecture III. were published in THE LANCET of March 22nd (p. 795), April 5th (p. 942), 12th (p. 1013), and 26th (p. 1155), 1902, respectively.

witnessed occurred in communities where the drinking-water was absolutely blameless."

Dr. J. Niven, medical officer of health of Manchester, says: "It is also necessary to remember that, given certain conditions, such as crowding in a household, typhoid fever is terribly infectious," and he gives three remarkable instances, one being that of a number of nurses in a public institution among whom it was introduced by one of their number and who took it from one another, as he was able "at once to dismiss the water and milk and also any condition affecting the drainage of the wards." None of the patients in the institution took it. (*Public Health*, vol. iv., p. 202.)

In the twenty-fourth annual report of the State Board of Health of Massachusetts for 1882 Dr. William T. Sedgwick, after attributing the epidemics at Lowell and Lawrence to polluted water, reports on three epidemics in Bondsville, Provincetown, and Milleville, each of which he attributes to "secondary infection," having excluded infection by means of water and milk. He gives a graphic account of the way in which the poison of the disease gets handed about, and says, "It is easy for me to understood how dirt, diarrhœa, and dinner too often get sadly confused. Personal filth is apparently the principal agent of secondary infection." Of the epidemic at Milleville he says, "The high mortality was probably due not so much to the severity of the disease as to utter neglect and dire poverty. The local conditions were very bad, and the people were mostly very poor. The circumstances favoured the spread of the disease by secondary infection, and to that, in my opinion, the epidemic was almost wholly, if not entirely, due."

As an instance of direct contagion I may mention that Dr. H. F. Parsons reported on an outbreak of typhoid fever at Bedlingtonshire (Northumberland) when there was endemic prevalence of the disease in a colliery district in 1889. He found that most of it was referable to "a case which occurred in a close, confined, and filthy part of Bedlington town. The disease first spread to other families living in tenements under the same roofs and then in the neighbouring streets, where want of air-space, privy and drain nuisances, and general want of cleanliness prevailed. Dr. Parsons reported in 1892-93 on a severe but circumscribed outbreak of typhoid fever which occurred at Newfield Moira (Leicestershire) extended over two months and was limited to two rows of houses. The first cases were possibly contracted in Burton-on-Trent. The spread of the fever was not due to polluted water or milk nor to defects of drainage or common use of privies but was "probably due to direct contact with specific infection favoured by common use of wash-houses, foul state of unpaved yard, and careless habits of mining population."

In the same year Dr. R. D. Sweeting reported on an outbreak at Temple Cloud, Cameley parish (Somerset). In this district the early cases were "associated with grossly unwholesome circumstances of water-supply and excrement disposal," but the later cases were "probably directly infected from the earlier owing to non-disinfection of stools."

Dr. Sweeting reported in 1893 on a localised outbreak of typhoid fever occurring during the first four months of the year on the outskirts of the town at Amlwch (Anglesea). He found that there was no common water-, milk-, or food-supply, and no drainage, but that the "disease spread from an imported case amongst tenants and visitors in the absence of proper nursing, isolation, and disinfection."

In 1895 Dr. S. W. Wheaton reported on a remarkable outbreak of typhoid fever at Quarry Bank (Staffordshire). This outbreak was almost entirely confined to a small portion of the district and especially to one particular street. "This marked localisation of the fever and the fact that it had in some instances affected nearly all the members of certain families, suggested the presence of some fever (e.g., typhus fever) more directly contagious from person to person than enteric fever. The fever in question was found to be undoubtedly typhoid fever. The water-supply was in most instances from draw-wells subject to pollution by leaking privies, defective drains, and by surface washings." The spread of the disease was "probably in part due to polluted water, partly to privies which had become infected, and to *personal contagion*." (The italics are mine.)

In 1895 Dr. H. T. Bulstrode reported on an outbreak occurring at Potterspury (Northamptonshire) which commenced in July and was still continuing at the date of the report in November. The evidence pointed to "polluted well water as a very important factor in causation, *though personal infection had probably considerable influence in the spread of the disease*."

In 1895 Dr. G. S. Buchanan reported on the continued prevalence of typhoid fever at West Bromwich (Staffordshire) for several years. In 1895 there was a heavy incidence of the disease on three small areas widely separated one from another. The prevalence of the fever was "referred to the many opportunities of local spread from patients or invaded premises afforded by sanitary defects and by want of isolation hospital accommodation."

In 1899 Dr. S. M. Copeman reported on an outbreak at Shirebrook village (Derbyshire) that the disease was "*mainly spread by personal contact*, though in addition there appeared reason for suspecting that the milk-supply was concerned in causing extension of epidemic."

In August, 1900, Dr. Copeman reported on an inquiry into the continued prevalence of typhoid fever at Shirebrook, in the Blackwall Rural District, on the borders of Nottinghamshire and Derbyshire. He found "that the annual recurring outbreaks of typhoid fever in Shirebrook have been in large measure dependent upon the polluted condition of the subsoil in the lower portions of the village arising from the impossibility of securing efficient isolation in the cottages. In the newer colliery village, situated as it is on considerably higher ground, typhoid fever had not made its appearance before 1899. In this portion of Shirebrook also the disease was undoubtedly spread by personal infection, although in addition question arose as to whether the consumption of infected milk may not have played a part in the extension of the disease."

Dr. J. Priestley, the medical officer of health of Lambeth, in 1898 reported that in that parish in three instances typhoid fever was conveyed from person to person during nursing.

In his annual report for 1900 as medical officer of health of the London County Council Mr. Shirley Murphy gives the following cases of infection from one person to another in different districts in London: "Dr. Reginald Dudfield observed this in four instances; Dr. Parkes shows the extension of the disease in Chelsea from one person of a family to seven others; Dr. Sykes gives account of two households in St. Pancras, in one of which the first case of the disease was followed by six others, and in the second by nine others; Dr. Newman connects directly or indirectly nine cases in Clerkenwell with one or other of three cases occurring among children attending the same Sunday school; Dr. Bryett gives particulars of six series of such cases occurring in Shoreditch; Dr. Kempster attributes a group of cases occurring in a street in Battersea to the same cause; and Dr. Bond mentions two nurses who were infected while in attendance upon cases of the disease."

An important paper was read before the Epidemiological Society in 1900 as an introduction to a discussion on the Infectivity of Enteric Fever by Dr. E. W. Goodall, medical superintendent of the Eastern Hospital of the Metropolitan Asylums Board. Dr. Goodall, who has had exceptional opportunities of studying the disease, has come to the conclusion that, contrary to the opinion of many high authorities, the view held by Bretonneau, Trousseau, Gendron, Piedvache, Budd, Sir Thomas Watson, and Dr. Alexander Collie, the former medical superintendent of the Homerton Hospital, the disease is directly infectious from one person to another is the correct one. He insists on the frequency with which those in attendance on the sick catch the disease, produces a number of instances of this having taken place among the nurses of the Metropolitan Asylums Board Hospitals, states that "enteric fever has attacked the staff in the three newest hospitals of the Asylums Board—the Brook, the Park, and the Grove," and adds: "Concerning the 10 cases at the Brook Hospital Dr. J. MacCombie has kindly informed me that five of them occurred in the persons of nurses working in the enteric fever wards, including an assistant nurse who came straight from the Broughton Sanatorium where she had been nursing enteric fever patients and who joined the Brook Hospital during the incubation stage of the disease, while of the other five, two were men whose duty it was to keep the floors of the enteric fever wards polished. With respect to the three cases at the Grove, the most recently erected hospital, I am indebted to Dr. J. E. Beggs for the information that they were two assistant nurses and a wardmaid, all of whom for nearly two months had worked in enteric fever wards. It was the duty of the wardmaid to carry the soiled linen to the tank." He

agrees with Dr. Collie's opinion, "that if enteric fever amongst the staff of a hospital is to be attributed to faulty sanitary arrangements, especially in connexion with the drainage, we should find the disease occurring more frequently amongst the patients who are not suffering from the fever than appears to be the case." With regard to the fact that other patients do not, as a rule, catch typhoid fever from patients suffering from that disease (although I am satisfied that they occasionally do so), he points out that it is rare, even for typhus fever, which everybody deems to be highly infectious, to be caught by one patient from another in a fever ward, and he concludes: "Personally I am strongly inclined to side with those who hold that enteric fever is much more readily and directly communicable than is commonly supposed."

In the discussion which followed Dr. F. Foord Caiger, medical superintendent of the South-Western Hospital, stated that the contagiousness of typhoid fever to those "who are in the daily administration of a fever hospital into which enteric fever is admitted has become a matter of conviction" and he stated that in the South-Western Hospital, "in the course of nine years during which enteric fever has been admitted there, 23 members of the staff have contracted it and three of them have died. Of these 23 members every one was a nurse and, with one exception, every one of these nurses was nursing in the enteric fever wards. When you consider that the proportion of enteric fever nurses to the whole of the nursing staff is only like one in 15 this fact is very striking."

Dr. Bulstrode is of opinion that "the view is certainly gaining ground that enteric fever is more directly communicable from the patients to the nurses and attendants than was formerly supposed."

Dr. Alfred Hill of Birmingham and Dr. Niven of Manchester are of the same opinion. The latter traced 53 cases out of 484 to direct infection.

Dr. P. Manby quoted an interesting instance of communication of typhoid fever from one person to another in an hotel; and Dr. Franklin Parsons, the President of the Society, one of the medical inspectors of the Local Government Board, gave several instances in his own experience in which, after careful investigation, "personal communication seemed the only agency" to which the disease could be attributed; and as the result of his great experience Dr. Goodall says: "I am quite sure that those are wrong who teach ..... as is evidently taught by the leading text-books ..... that there is no risk in nursing typhoid fever patients and that there is no necessity for removing an enteric fever patient from his home to hospital." In fact, the result of this discussion showed that there was great unanimity of opinion, not only among the inspectors of the Local Government Board, but among medical officers of health throughout the country, that communication by direct contagion is a much more common cause of the spread of typhoid fever than is commonly supposed.

We now come to the consideration of the actual poison of the disease. I will first give you Mr. (afterwards Sir John) Simon's views in his own words. He said in his supplementary report for 1873, "While, however, thus far there is only the familiar case of the so-called *common chemical poison*, which hurts by instant action and in direct proportion to its palpable and ponderable dose, the other and far wider possibilities of mischief which we recognise in filth are such as apparently must be attributed to *morbific ferments* or *contagia*, matters which not only are not gaseous, but on the contrary, so far as we know them, seem to have their essence, or an inseparable part of it, in certain solid elements which the microscope discovers in them—in living organisms, namely, which in their largest sizes are but very minute microscopical objects, and at their least sizes are probably unseen even with the microscope, organisms which, in virtue of their vitality are indefinitely self-multiplying within their respective spheres of operation, and which, therefore, as in contrast with common poisons, can develop indefinitely large ulterior effects from first doses which are indefinitely small.

"As, apparently, it is by these various agencies (essential and incidental) that filth produces 'zymotic' disease, it is important not to confound them with the fœtid gases of organic decomposition, and the question what infecting powers are prevalent in given atmospheres should never be regarded as a mere question of stink. It is of the utmost practical importance to recognise in regard of filth that agents which destroy its stink may yet leave all its main powers of disease-production undiminished. Whether the ferments of disease if they could be isolated in sufficient quantity would prove themselves in any degree odorous is a point on which no guess need be hazarded, but it is certain that in doses in which they can fatally infect the human body they are infinitely out of reach of even the most cultivated sense of smell, and that this sense (though its positive warnings are of indispensable sanitary service) is not able, except by indirect and quite insufficient perceptions, to warn us against risks of morbid infection."

And further, in the same report: "It must be remembered that gases on the one hand and the particulate ferments on the other stand in widely different relations to air and water as their respective media of diffusion. The ferments, so far as we know them, show no power of active diffusion in dry air, diffusing in it only as they are passively wafted and then probably, if the air be freely open, not carrying their vitality far, but as moisture is their normal medium currents of humid air (as from sewers and drains) can doubtless lift them in their full effectiveness, and if into houses or confined exterior spaces then with their chief chances of remaining effective; and ill-ventilated low-lying localities, if unclean as regards the removal of their refuse, may especially be expected to have these ferments present in their common atmosphere as well as, of course, teeming in their soil and ground water. Considerations like some which I have stated in regard of infective air apply equally to infective water. In the latter, just as in the former, the zymotic malignity is but indirectly and most imperfectly suggested to us by qualities which strike the common sense, or by matters which chemical analysis can specify. As any unbrutalised sense of smell will turn with disgust from certain airs, so will it, and common taste and sight, be repelled by certain waters, and as the chemist can show certain foulnesses in the one, so he can show certain foulnesses in the other; but these tests, it must always be remembered, are tests only of the most general kind. Confessedly they do not touch the *corpus delicti*, but only certain conditions to which it is or may be collateral; and their negative findings are consequently not entitled to the same sort of confidence as their positive. Chemical demonstration of unstable nitrogenous compounds in water is a warning which of course should never be disregarded; but till chemistry shall have learnt to identify the morbific ferments themselves, its competence to declare them absent in any given case must evidently be judged incomplete, and waters which chemical analysis would probably not condemn may certainly be carrying in them very fatal seeds of infection."

Mr. Simon continues: "Since the year 1849, when Dr. (now Sir William) Jenner made known his conclusive and masterly discrimination of this specific form of fever, successive studies have tended with singular uniformity to connect it in regard of its origin with nuisances of an excremental sort.[2] In illustration of that fact in the natural history of enteric fever I may refer to an abstract which I append of the experience of the Medical Department during the four years 1870–73 in this particular branch of disease-production, and such illustrations might be multiplied to any desired extent. The experience is, not only that privies and privy-drainage, with their respective stinkings and soakings, and the pollutions of air and water which are thus produced, have in innumerable instances been the apparent causes of outbreaks of enteric fever, but, further, that they have seemed capable of doing this mischief in a doubly distinctive way; first, as though by some aptitude which other nuisances of organic decomposition, though perhaps equally offensive, have not seemed equally or nearly equally to possess; and secondly, as though this specific property, so often attaching to them in addition to their common septic unwholesomeness, were not, even in them, a fixed property. The explanation of this experience, the explanation of the frequent but not invariable tendency of privy nuisances to infect with enteric fever, has seemed to consist in the liability of such nuisances to carry with them, not invariably, but as frequent accidental adjuncts, the 'specific' contagium of any prevailing bowel-infection, for presumably the privies of a population receive (*inter alia*) the diarrhœal discharges of the sick; and it has long been matter of fair pathological

[2] The very able writings of Dr. Murchison, dating from a paper by him in the Medico-Chirurgical Transactions of 1858, have been of particular influence in that contention.

presumption that in any 'specific' diarrhœa (such as eminently is enteric fever) every discharge from the bowels must teem with the contagium of the disease. Medical knowledge in support of this presumption has of late been rapidly growing more positive and precise, and at the moment of my present writing I have the gratification of believing that under my lords of the Council it has received an increase which may be of critical importance in a discovery which seems to give us for the first time an ocular test of the contagium of enteric fever; in the discovery, namely, of microscopical forms, apparently of the lowest vegetable life, multiplying to innumerable swarms in the intestinal tissues of the sick, penetrating on the one hand from the mucous surface into the general system of the patient, and contributory on the other hand, with whatever infective power they represent, to the bowel contents which have presently to pass forth from him" (Report of the Medical Officer of the Privy Council and Local Government Board, New Series, No. II., 1874).

The investigations referred to by Mr. Simon were those made by Dr. Klein in his report on the Intimate Anatomical Changes in Enteric, or Typhoid, Fever in the report of the medical officer of the Privy Council and Local Government Board for 1874 (New Series, No. VI.). In this report Dr. Klein described the changes in various organs in typhoid fever, giving a number of plates in illustration of these changes and also described certain organisms found in the intestinal mucous membrane and some other organs in the early stages of the disease. After this other observers described various organisms found in the organs in fatal cases of typhoid fever, especially Klebs who announced the discovery of a long thread-like bacillus which he considered to be the cause of the disease, and in 1880 Eberth discovered the rod-shaped organism now known by his name as Eberth's bacillus, or the bacillus typhosus. It appears, however, that before Eberth's paper appeared Koch had found in about half the number of cases examined by him typical colonies of short bacilli precisely similar to those afterwards described by Eberth. It would appear, therefore, that Koch first discovered the true bacillus typhosus, although his name has not become associated with it. This bacillus was subsequently investigated by Dr. Gaffky, whose paper was published in the *Mittheilungen aus dem Gesundheitsamte*, vol. ii., 1884, and a translation of it by Dr. Pringle was published by the New Sydenham Society in its volume for 1886. Dr. Gaffky examined the organs of 28 fatal cases of typhoid fever and found the typical bacillar masses in 26 of them. He says: "My results agree entirely with the descriptions given by Eberth, Koch, and Meyer in regard to the shape and appearance of the bacilli. On the average they are about thrice as long as they are broad; their length corresponds to about the third part of the diameter of a red blood corpuscle. In isolated spots one may see somewhat longer threads which on more thorough examination can, however, be seen to be made up of several members. Trifling differences in breadth occur even in different cases in the same epidemic, but this appearance is to be referred only to the greater or less intensity of the staining of the sections; at least, I have never been able to observe it in preparations on cover-glasses in which the staining is always deep; the extremities of the bacilli are distinctly rounded off. In several of the cases I examined the bacilli found in the internal organs contained unmistakable spores which appeared as round portions, remaining unstained, and occupying the whole breadth of the bacilli."

In discussing the questions as to whether these typhoid bacilli are specific pathogenic organisms he says: "If I range myself on the side of those who consider the typhoid bacilli as specific organisms and their origin from putrefactive bacilli as at least very improbable it is upon the following grounds. In almost all the cases of typhoid fever which I have examined, whether they came from Berlin hospitals, from St. Petersburg, or from Wittenberg, there was always present a definite form of rod-shaped organism in the internal organs, arranged in quite a characteristic manner, and undoubtedly the same as had previously been observed at various times and in various places by Eberth, Koch, Meyer, and C. Friedländer. Anatomical examination gives us not the slightest ground for thinking that these bacilli had anything whatever to do with putrefaction. To all appearance they did not proliferate after death, as one does not find that the masses are at all more numerous or larger in cases in which putrefaction has already set in than in those examined as soon after death as possible. Further, in an organ removed as early as possible from the body, although it may contain ever so numerous masses of bacilli, all coarse signs of commencing putrefaction perceptible to the senses are wanting. In the same way the microscopic appearance of the tissue presents nothing suggestive of that process. The nuclei in the vicinity of the masses stain rather exceptionally deeply with aniline stains, whilst the bacilli themselves (apart from the conditions found in the intestine) always form limited masses and never permeate the organ in all directions, as we are accustomed to see in the case of putrefactive bacilli. I would also adduce as a very weighty argument against the view that typhoid bacilli have any connexion with putrefaction the fact that when cultivated outside the body they never become causes of putrefaction, as far as my researches permit of a judgment. I have carried out a great number of cultivations in succession with those derived from 13 different cases and the bacilli never produced putrefaction in substances extremely liable to putrefaction in spite of their luxuriant growth. Even when cultivated outside the body for more than a year nothing of the sort has occurred. As the bacilli always form the same masses in the internal organs, whether one examines fatal cases of typhoid fever in Russia, Germany, Switzerland, or England, so in the same way, cultivated outside the body on the same nutrient matter, they have hitherto always displayed the same manner of growth and the same mode of spore development, whether I obtained the cultivations from typhoid organs in Berlin or from the Wittenberg epidemic."

M. A. Rodet and M. G. Roux (of Lyons) consider that there are intimate relations between the bacillus coli and Eberth's bacillus; that the latter is, in fact, the former "in a state of attenuation or degeneration"; they "think that the bacillus coli becomes virulent, *typhigenic*, without notably changing botanical characters; and that it is within the organism notably in the spleen that it takes the type of the bacillus of Eberth, degenerating no doubt under the destructive acts of the organism." And they add: "It is not necessary to insist on the consequences which these facts entail relative to prophylaxis, it is not only typhoid fever dejections, but fæcal pollution of any kind which may engender typhoid fever."[3] This would have delighted Murchison's heart but it is a view which has not been generally accepted.

For a detailed description of the characters and methods of isolating and cultivating the typhoid bacillus I only need refer you to Dr. P. Horton-Smith's excellent Goulstonian Lectures,[4] delivered in this College in 1900, but I wish to refer more particularly to a specially interesting account given in those lectures of the persistence of the typhoid bacillus in the body, especially in the bile or the bone-marrow, where it has been now shown it may remain for years. Dr. Horton Smith quotes some cases from a paper by Hunner in the *Johns Hopkins Hospital Bulletin* for August and September, 1899, as follows: "In one case the bacilli were found in pure culture in the inflamed gall-bladder three months after the fever, in another eight months, and in a third after an interval of seven years." The most remarkable case of all, however, and one very carefully tested, is that recorded by von Dungern (*Münchener Medicinische Wochenschrift*, 1897, p. 699) in which 14½ years after the attack of typhoid fever the bacilli were still present in pure culture in the pus, and Dr. Horton-Smith very well adds: "Truly no longer can we say with Dr. Budd, that 'by destroying the infectious power of the intestinal discharges the disease may be in time finally extinguished.' So far, indeed, from the stools being the only agents by means of which the disease is spread they are but one of a series of agents. So far, too, from the patient ceasing to be a source of danger after his restoration to seeming health, he may carry about in himself the seeds of infection for months and even years."

A useful account of the tests used for discriminating between bacillus coli and bacillus typhosus was given by Dr. A. C. Houston in introducing a discussion on Typhoid Fever in its Public Health Aspects at the Cheltenham meeting of the British Medical Association and will be found in the *British Medical Journal* of August 17th, 1901.

Dr. Klein made an investigation on the Eberth-Gaffky bacillus which is described in the report of the Local Government Board for 1892-93. He could not find the bacillus in the blood of the living typhoid fever patient but in certain

[3] Public Health, vol. ii., 1889-90 (from Comptes Rendus de la Société de Biologie, tome ii., No. 7, February, 1890).

[4] THE LANCET, March 24th (p. 821), and 31st (p. 910), and April 14th (p. 1050), 1900.

tissues of the bodies of those who had died from the disease he never failed to find it, especially in the mesenteric glands and in the spleen, and he describes its differences from the bacillus coli. The next year he reported that he had made experiments with this bacillus on monkeys. Two monkeys to whose food had been added a culture of the typhoid bacillus did not suffer in any way; no pathological lesions were found in them after they were killed, neither could the typhoid bacillus be detected in their blood or spleen. On the other hand, eight monkeys having been inoculated with cultures of the bacillus the true typhoid bacillus was found in abundance in the spleen of one of them, the bacillus coli in that of another, and "a nondescript bacillus exhibiting characters pertaining some of them to bacillus coli, others to the typhoid bacillus" was found in a third. In inoculated calves the juice of the enlarged inguinal glands was always found to contain the typhoid bacillus in abundance. The next year Dr. Klein demonstrated that under certain conditions the typhoid bacillus readily multiplies in sewage, "while as regards drinking-water he shows not only that in many different waters this bacillus may persist longer than has hitherto been demonstrated, but also that in certain of them which are to be thought of as affording pabulum for the microbe the typhoid bacillus is able on occasion to proliferate in abundant fashion."

Dr. Edmund Cautley made a research on the behaviour of the typhoid bacillus in milk and his account of it will be found in the report of the medical officer of the Local Government Board for 1896–97. He found that in unsterilised milk to which the typhoid bacillus was added it was recovered in considerable numbers from the milk which had been kept for six or seven days and had turned completely sour; and in sterilised milk to which the typhoid bacillus and some other microbes were added he found that the typhoid bacillus will live in the presence of the bacillus lactis for a week but will not actually multiply under these conditions. He says "that the presence of the oïdium lactis in sterilised milk does not interfere with the growth and multiplication of the typhoid bacillus" and that yeast did not interfere with the growth of the typhoid bacillus, as "both microorganisms increased in number and neither appeared to be modified in its growth by the presence of the other." He considers that "the typhoid bacillus will live in milk under conditions which ordinarily prevail in a household. When this bacillus has been artificially added in large amount to milk in the condition in which it commonly reaches the consumer the presence of the microbes *in the living state* may be demonstrated after the milk thus treated has been kept for several days." There is no indication from the above investigations that this microbe is capable of multiplication under the conditions in question. Judging from the results obtained it is very probable that the number present rapidly diminishes in milk which is kept. The observations with regard to the bacillus lactis and to sour milk "indicate that it is quite possible for the typhoid bacillus to exist in curd-cheeses."

In a report by Dr. Klein on the behaviour of certain pathogenic microbes in milk, cream, and cheese he says: "It is well known that the typhoid bacillus grows luxuriantly in milk both at 20° C. and at 37° C. It does not alter the fluid character of the milk, although it produces acid, as is well known by the reddening produced when litmus milk is used as the culture medium." His experiments on cream showed "that cream kept at as high a temperature as 37° C. is not a suitable medium for the growth and multiplication of the typhoid bacillus, but that it is a suitable medium when kept at 20° C. He further found that the typhoid bacillus does not grow and multiply when planted on Cheddar cheese either at 37° C. or at 20° C. (Twenty-ninth report of the medical officer of the Local Government Board for 1899–1900).

In the *Archives de Médecine Expérimentale et d'Anatomie Pathologique*, No. 1, Jan. 7th, 1889, is an account of a research made by M. J. Grancher and M. E. Deschamps on the behaviour of the typhoid bacillus in the soil. Their conclusions are as follows: "1. It does not pass through soil with irrigation water. 2. It is stopped by from 20–40 centimetres of thickness of soil. 3. It retains its life in the midst of all the organisms soil contains, five and a half months after it has been sown. 4. It does not penetrate into healthy vegetables." (*Public Health*, vol. ii., 1889–90.)

A most interesting series of investigations has been made by Dr. Sidney H. C. Martin on the Growth of the Typhoid Bacillus in Soil and his accounts of them will be found in the reports of the medical officer of the Local Government Board for 1896–97 and onwards. He first found that the bacillus when planted in organically polluted soil, "as, for instance, the samples of earth from Chichester," speedily increased and spread abroad, whereas in an unpolluted soil from an uninhabited and cultivated area "it languished and quickly died out" under like conditions of temperature and moisture. It was then determined to test in unsterilised soil of both classes the ability of the typhoid bacillus to contend with the other microbes already present in such soil and Dr. Houston was associated with Dr. Martin in this investigation. 21 samples of various soils were examined. In eight of these no bacillus coli was found. In the remaining 13 bacilli with more or less resemblance to the true bacillus coli were found and in four of these the typical bacillus coli itself was present; these four soils, however, were shown to have been polluted with excrement; while the spores of bacillus enteritidis were found in five of the soils and in exceptionally large quantity in two of them which were shown to have been polluted with excrement. Dr. Martin then showed that when the typhoid bacillus was inoculated on a soil containing bacteria belonging to the bacillus coli group it was recoverable after 50 days from this soil at the point at which it had been inoculated. "It had survived in competition with the bacillus coli-like micro-organisms but had not multiplied."

One of Dr. Martin's most important conclusions is "that the soils which are favourable to the growth of the typhoid bacillus are those which have been cultivated, more particularly soils of gardens and the *entourage* of houses. In these soils the bacillus was found to be alive and to have retained its vegetative properties for as long as 456 days; this being found true for sterilised soil which was moistened throughout with water. On drying this soil, even when it had become so dry that it could be made into a fine powder, the typhoid bacillus could still be obtained from it and had retained its vegetative properties, although it grew more slowly than when obtained from the same soil in its moist condition." Again, "In favourable soils in a moist condition the bacillus not only grew at a temperature of 37° C., but it flourished when the soil was exposed to much lower temperatures; for example, the temperature of the laboratory, which varied between 9° and 24° C. and the temperature of an outside shed between 3° and 16° C." On the other hand, virgin soils, sandy or peaty, "are absolutely inimical to the growth of the typhoid bacillus."

Dr. Martin's further investigations were made on natural "unsterilised soils which in the sterilised condition were found favourable to the growth of the bacillus. In not a single instance, however, was the typhoid bacillus regained, although laborious and prolonged experiments were made with this object. The obvious conclusion, therefore, was that under the conditions of the experiments the presence of the bacteria of the soil had either prevented the detection of the bacillus or had inhibited its growth and so led to its ultimate death and disappearance. It must be remembered that the typhoid bacillus does not form spores, so that its continued vitality depends on its power of multiplication and division. There is no resting-stage of this micro-organism as far as is known, and although in sterilised soil the bacillus will retain its viability for a while if the soil be dried at a low temperature to a powder, yet soon afterwards it dies and can never be re-vivified. Placed, therefore, amidst other bacteria under certain conditions of moisture and temperature the bacillus may in unsterilised soils be beaten out of the field by the other bacteria present." Dr. Martin's further experiments brought him to the conclusion that "there is some evidence to show that under the conditions of experiments the disappearance of the bacillus has taken place *pari passu* with an increase in the number of the putrefactive bacteria." In these experiments Dr. Martin has adopted a method of isolating the typhoid bacillus from the other bacilli present in the soil which appears to give more satisfactory results than the methods which have been previously adopted.

In a long and elaborate paper by Dr. Justyn Karlinski, published in the *Archiv für Hygiene*, Band xiii., Heft iii., the author details a number of careful experiments on the behaviour of the typhoid bacillus in earth and he draws the following conclusions:—"1. The longest life-duration of the typhoid bacillus in earth did not exceed in his experiments three months. 2. The life duration of the bacillus buried with typhoid excreta and hence under natural conditions is essentially shorter than bacilli in the blood buried in

earth at the same time. 3. In the deeper layers of the earth the typhoid bacilli bid defiance to moisture, to alternations of temperature, and to the activity of other micro-organisms. 4. Exposed to moisture and sunshine on the surface of the ground the bacilli quickly die. 5. Alternating and copious moisture, whether the moisture rises into or falls on to infected earth, essentially shortens the life duration. 6. In layers of earth in which there are the active roots of plants the life duration is very short. 7. The typhoid bacilli may be recognised three months after death in certain conditions of delayed putrefaction and when the specific micro-organisms of putrefaction are denied access." (*Journal of Public Health*, vol. iv., 1891-92.)

Dr. Klein made some experiments, the results of which will be found in the report of the medical officer of the Local Government Board for 1898-99, on the Fate of Pathogenic and other Infective Microbes in the Dead Animal Body. He was unable to find the bacillus typhosus, or the bacillus coli, or the proteus vulgaris or any other aerobic microbe in the bodies of guinea-pigs which had been previously inoculated with those bacilli, buried, and exhumed 30 days or more later. His experiments showed "that the typhoid bacillus is even less resistant than the cholera vibrio. In 20 days after burial, no matter in what form this had taken place, typhoid bacilli could not be recovered from any of the bodies; from a guinea-pig buried in sand they could not be recovered after 14 days." "The German Commission exhumed the animals not earlier than one month after burial, and their examinations of the dead bodies for typhoid bacilli were in all cases negative."

In the *Journal of the Pasteur Institute* for February, 1897, is a paper by M. P. Remlinger and M. G. Schneider of the Val-de-Grâce laboratory on the Ubiquity of the Typhoid Bacillus. The authors attempt to answer the question, "Does the bacillus of typhoid exist in nature outside the sick man and the products which emanate from him?" A series of experiments extending over many months was carried out on various materials, such as the public water-supplies and wells of several towns having epidemics of typhoid, the soil and dust from different localities, the discharges from the digestive tract of persons not affected with typhoid, &c., and a bacillus giving all the principal laboratory reactions of that of typhoid was obtained from all these sources. The following illustrations are of special interest. In 13 samples of soil and dust the bacillus typhosus was found seven times, (*a*) in the refuse from barracks where there were some cases of typhoid; (*b*) in dust from the laboratory floor; (*c*) in the space between the joists of a room in other barracks; (*d*) in four specimens of soil, both superficial and a metre in depth, from the courts and gardens of Val-de-Grâce. These in three instances were pathogenic for animals. In the examination of the fæces of 10 persons treated at the hospital for affections which had nothing in common with typhoid, five reacted like the bacillus typhosus. Thus (*a*) in a case of leukæmia specimens examined at intervals of 15 days gave each time a positive result, (*b*) in one case of acute tuberculosis without intestinal lesions; (*c*) in a case of premonitory dysentery; (*d*) in two cases of chronic malaria. None of these patients had ever had typhoid fever. Of the bacilli from these five cases four were pathogenic for guinea-pigs. In many additional cultures from water, soil, and the intestines, bacilli with every characteristic of bacillus typhosus were found, except that they were not pathogenic for animals and were not agglutinated by the serum from a typhoid patient. In other words they seemed the same species but attenuated as to virulence. After some remarks illustrated by comparisons with the variations of the cholera vibrio, these investigators state: "It is allowable to suppose that facts of a similar kind reproduce themselves in connexion with the bacillus typhosus. The species of the bacillus of Eberth comprehends, perhaps, varieties more or less numerous which do not probably react similarly under the influence of the serum of an animal immunised against a determined variety. The belief in the invariability of type in pathogenic microbes is to-day much weakened by many facts. The question of race, descendants from a common stock but altered by unknown vicissitudes, acquires an importance which must not be underrated. Why should not this theory apply to the bacillus typhosus? We incline to think that bacilli not pathogenic and indifferent to the serum test which are encountered in water, soil, &c., are only varieties of the bacillus typhosus; at least, the parentage is evident even if the identity is not absolute. This diversity of fundamental type will perhaps serve to explain the variable forms of typhoid infection which are becoming recognised. If this interpretation of facts is exact the following conclusion will result. The bacillus typhosus is distributed in nature outside the human body; it is found in potable waters, in soil, in the intestines of persons not attacked with typhoid, and without doubt forms a part of the microbic flora of the media which surrounds us. This idea is not subversive of recognised facts as to the general etiology of typhoid, but rather enables us to conceive and comprehend facts otherwise inexplicable. Daily observations, especially noted in rural places, have set in relief the part played by contagion in the formation and extension of certain epidemic centres; their value remains. Modern researches have demonstrated the prime importance of impure waters in its development and spread; the character of the proof defies all question. But all the cases must originate from contagion or water polluted with the dejections of typhoid patients. Many times it breaks out in patients or groups worn out with fatigue, overwork, or privations, or after eating various foods, without its being possible to trace the origin of the contagion or the use of a badly polluted water. The facts conform more easily with the idea of the widespread presence of the bacillus typhosus, which accounts for its dispersion in surrounding media and its presence eventually in our natural cavities. A water reputed pure may carry it. Thus introduced into the organism it will live there unoffensive till some depressing circumstance, a fortuitous assistance, perhaps the result of some associated microbe, will open to it a career of action."

Dr. John Robertson, the medical officer of health of Sheffield, made a number of experiments with soil "out-of-doors." The results of these experiments "prove that the typhoid organism is capable of growing very rapidly in certain soils and that apparently under certain conditions the organisms can survive from one summer to another. The rains of spring and autumn or the frost and snows of winter do not kill them off. Sunlight has a most powerful bactericidal influence on the typhoid organism." But this action is limited strictly to the organisms actually on the surface, a layer of soil one-sixteenth of an inch in thickness protecting them. "Cultures of the typhoid organism planted at a depth of 18 inches grew to the surface; so also patches inoculated on the surface showed that at least the organism could grow downwards to a depth of three inches." (*British Medical Journal*, Jan. 8th, 1898.)

According to Liebermeister "the curves representing the frequency of typhoid correspond to the curves of average temperature, only with this difference—the different points of the typhoid curve follow those of the temperature curve by an interval of some months," and he suggests that it takes two or three months for the changes of temperature to penetrate to the breeding places of the typhoid germs. (Ziemssen's Cyclopædia, vol. i., p. 65.)

The present war in South Africa has lent additional interest to the question of typhoid fever in armies and the ways in which it spreads under the circumstances of camp life. In an article on Typhoid Fever in Armies in the Field, by Surgeon-Major Vincent, professor agrégé at Val-de-Grace, Paris, he states that "the predisposing causes were the average age of the soldier; the time of year chosen for military operations, summer or autumn; imperfect feeding and the digestive troubles which resulted therefrom; the inevitable deficiencies as to hygienic conditions as regards both the soldier's body and his clothes; a hot climate, as is the case in colonial wars; the shutting up of troops in camps or besieged towns; a very prolonged war and the demoralisation of an army when conquered. The immediate cause was the ubiquitous bacillus typhosus. This bacillus was able to live in a latent condition in the digestive tract and thence under favourable conditions to multiply itself and give rise to the appearance of a spontaneous epidemic." (THE LANCET, August 11th, 1900, p. 437.)

Some information on the matter is to be derived from the report of Dr. G. Pratt Yule on the camps in the Orange River Colony, published in the *Times* of Dec. 16th, 1900, the most important sentence in which from our point of view is the following. After referring to the fouling of the ground round the tent doors by urine and slops, he says: "Practices such as these have undoubtedly proved the source of a large proportion of the typhoid cases, and these will certainly greatly increase during the coming summer and autumn. In this particular it is important to remember that urine of convalescent typhoid fever patients often contains a pure culture of the typhoid germ which by methods of disposal

like the above becomes blown about in the dust of the camps. I am of opinion that the typhoid infection of the camps is principally air-borne."

In the *British Medical Journal* of Nov. 10th, 1900, is an article on an outbreak of typhoid fever at Quetta, India. At this place the water-supply is derived from the hills and is above suspicion. There was, as usual, freedom from typhoid fever up to May but from May 2nd to 13th there were dust-storms with sore-throat and tonsillitis, followed by an outbreak of typhoid fever, some of the cases commencing with sore-throats. The night-soil was placed in pits to the north-west, from which the prevailing wind blew, and in the dry air the deposited matters were dried and blown about as dust. Those companies suffered most who were nearest to the filth-pits; the air from the quarter where the filth-pits were contained "large numbers of germs that are invariably present in fecal matter and not in pure air, although the enteric bacillus itself was not isolated." It appears from a subsequent article on Sept. 14th, 1901, that "the outbreak ceased on removal of this source of infection." It is also stated that in Jhansi, Nasirabad, Mhow, and Rawal Pindi typhoid fever prevails during the dry season and the dust-storms, and that, on the other hand, Roorkee has very little typhoid fever and is comparatively free from dust.

Dr. H. E. Leigh Canney has published an interesting paper on Typhoid, the Destroyer of Armies, and its Abolition. He holds the view that nearly all the cases of the disease on service are water-borne and in order to prevent it he propounds a scheme for boiling the whole of the water used and suggests the formation of a Royal Water Corps to be devoted to the work of supplying sterilised water, boiling the milk, and "the disinfection of all salads after they have been washed in ordinary water," the watchword of the water corps on a campaign to be "boiled water or nothing." These suggestions met with considerable support at the meeting of the Royal United Service Institution, where the paper was read. Sir William Broadbent, the chairman, pointed out that "whatever importance might attach to dust and flies they were subsidiary to the infection by water. With regard to the efficiency of the method proposed by Dr. Canney, Sir William Broadbent thought that if it could be secured that no soldier drank anything but boiled water they would get the upper hand entirely of typhoid. The whole question turned upon the practicability of the scheme which had been well thought out and was not brought forward in a nebulous condition. Although, of course, they must bear in mind that after a long march or after the excitement and exertions of a fight a soldier could not be prevented from drinking the first water he came across, yet if he started with his bottle full of pure water and the water-carts contained nothing but pure water, whilst only pure water was drunk in the camps, an enormous gain would have been secured." Major R. H. Firth, the professor of military hygiene at Netley, expressed great sympathy with the proposed scheme. He considered that sanitary officers should undergo a special training and they must be supplied with properly instructed men to carry out the work. Dr. J. W. Washbourn insisted that the disease was also conveyed by flies and dust and thought that it was not difficult to provide for a proper disposal of excreta and so to prevent much of the distribution of the poison of the disease by the agencies just mentioned.

A discussion on the Recent Epidemic of Typhoid Fever in South Africa was opened at the Clinical Society of London by Dr. Howard H. Tooth and reported in THE LANCET of March 16th, 1901, pp. 771, 786. He is of opinion that the disease is spread in South Africa not merely by polluted water but also by dust and flies, and he says of the flies that "they naturally infest persons who are ill but seem to be peculiarly attracted to enteric fever patients, hanging in loathsome groups around their mouths and feeding-vessels. They were all over our food, and the roofs of our tents were at times black with them. It is not unreasonable to look upon flies as a very possible agency in spreading the disease not only abroad but at home." He also points out "that with the first appearance of the frost enteric fever almost entirely disappears ..... it seems hardly credible that the almost sudden cessation of an epidemic can be due to the effect of cold upon the enteric fever bacilli only. But there can be no doubt in the mind of anybody who has been living on the open veldt as we have for three or four months that the flies are extremely sensitive to the change of temperature and that the cold nights kill them off rapidly. On consideration of these points it is surely justifiable to assign an important share to flies in the spreading of infection."

In the *British Medical Journal* of Feb. 15th, 1902, is a paper by Lieutenant-Colonel R. H. Quill, R.A.M.C., senior medical officer, Ceylon, on Air-borne Typhoid Fever. He maintains that the disease is frequently air-borne and gives his experience of it at the camp of Diyatalawa in the hills of Ceylon, which was formed in August, 1900, for the Boer prisoners of war. There occurred at this camp an outbreak of typhoid fever which was certainly not due to the water or milk, the water-supply and filtration arrangements having been changed in no way since the cessation of the epidemic among the prisoners, and there have been no cases of typhoid fever since 1900. No uncooked food or vegetables were used in the camp. All men leaving the camp for purposes of duty or pleasure were obliged to take with them a water-bottle filled with filtered water. The aerated waters used in the camp were identical with those used at the sanatorium where there was no typhoid fever. Lieutenant-Colonel Quill was driven to the conclusion that the affection was air-borne, being derived from the adjoining camp for prisoners of war, where at the time an epidemic of typhoid fever was raging. After giving his reasons for that opinion he submits that he has shown (1) that all water avenues through which typhoid fever could have been conveyed to the military camp at Diyatalawa were efficiently guarded and that therefore a water-borne origin must be abandoned; and (2) that the affection was air-borne, resulting from emanations from specifically infected latrines, infected dust, or bacilli-laden flies.

Dr. A. Elliot and Dr. Washbourn contributed a paper on Typhoid Fever in South Africa to THE LANCET of Jan. 18th, 1902, p. 139. They conclude "that the type of typhoid fever met with in South Africa does not differ in any essential respects from that met with in England and America. The mortality and the incidence of complications are much the same as in the variations which are met with elsewhere; the only complication which appears to be especially prominent is phlebitis which occurred in 5·6 per cent. of our cases. ..... We do not feel that inoculation has any marked influence either in preventing or in modifying the disease."

Since then Dr. George Turner, the medical officer of health of the Transvaal, has contributed a paper to the *British Medical Journal* of Feb. 15th, 1902, on Typhoid Fever in South Africa, its Cause and Prevention. In it he states that he should not advance his opinion on the matter if he "did not feel that the growing tendency to attribute enteric to wind and flies was not becoming a source of danger." He maintains from six years' experience "that the causation of epidemics in South Africa is practically similar to that which gives rise to the majority of cases in England—viz., a polluted water-supply." He states that only on one occasion has he "had any grounds for supposing that dust was concerned in the production of typhoid and on that occasion the dust appeared to have acted through the agency of the water used for drinking." He does not deny absolutely the possibility of typhoid infection by means of wind-borne dust but he says that it is rare. "As a matter of fact, typhoid cases are less frequently met with just at the period at which *dust-storms* prevail and are more numerous when, on account of heavy rain, dust is less troublesome. This, to my mind, is conclusive proof that dust does not exert much injurious influence as regards typhoid. As regards flies I can only say that I hold a similar opinion. The possibility of the conveyance of enteric through these pests is undeniable, but in this instance also the supposed cause, the flies, begin to be troublesome long before typhoid prevails and continue to annoy us long after it has subsided. If the flies were really important agents in the spread of typhoid fever one would expect that even if the disease did not commence to prevail soon after these nuisances commenced to be numerous, ... because it is conceivable that at the time typhoid-infected stools would be rare, yet when once typhoid became common the flies should carry on the infection which should continue as long as, or longer than, the flies continue." Finally, he strongly maintains that "typhoid in South Africa is almost entirely due to polluted water." He admits that filters were sent out with the troops but states that they were not generally used; while, on the other hand, "where the commanding officer had a 'fad about water' the case incidence of typhoid was insignificant." To show that he does not underrate the difficulty of supplying an army with water when on the march he adds: "My private opinion is that if the army had been supplied with the best sanitary expert advice on the march from Paardeberg to Bloemfontein one of two things would

have resulted, either the army would never have reached Bloemfontein or it would, as it did, have suffered from fever; one or other of these results was inevitable." The report of the Commission sent to South Africa, consisting of Professor J. Lane Notter, Professor W. J. R. Simpson, and Lieutenant-Colonel Bruce, has not yet been published, so that unfortunately I cannot avail myself of the information contained in it for the purpose of this lecture. I have, however, Professor J. Notter's permission to state as his own personal opinion that he considers "that while water was a very frequent cause of typhoid fever among the troops it could not, I think, be said to be the *only* cause of it. Others were the aggregation of men on limited areas—density of population—without any of the usual methods of drainage and the disposal of excreta and refuse which exist where numbers are usually congregated together in towns and villages in civil life; this state of things is always present in standing camps; the transference, too, of the contagion by flies, which constitute a real danger unless food is properly stored and kept from them, especially where trench latrines are used. The soil, too, is an important factor; the ground seems wanting in nitrifying organisms, the result being that animal refuse remains long without undergoing that process of disintegration and oxidation that is usual in this country. Perhaps this is due to the absence of lime or like base, for lime is seldom found in large tracts of the Orange River Colony and Transvaal."

I originally intended the subject of these lectures to be merely the "Etiology of Typhoid Fever" and this would have been quite sufficient, but I afterwards thought that it would add to their interest if I showed how the mortality from this disease has been diminished in this and in some other countries by suitable methods of prevention. The methods of prevention themselves are those which apply to any infectious disease and have been described so frequently that there is no need for any further account of them, the only peculiarity in the case of typhoid fever being that less attention need, as a rule, be paid to the methods of preventing direct infection, whilst the greatest attention should be given to the prevention of indirect infection by the channels which have been already described in these lectures. As the disease is no doubt chiefly conveyed by drinking-water it is of the highest importance that this water should not be contaminated with the typhoid poison, or, as Sir John Simon puts it, "It ought to be an absolute condition for a public water-supply that it should be uncontaminable by drainage." Suitable precautions, too, must be taken to prevent other foods, such as milk, oysters, &c., from becoming contaminated. The soil under houses and the air in and around them must be kept pure by the adoption of methods for the removal of excreta from the vicinity of habitations speedily and continuously. The late Sir George Buchanan showed us that the death-rate from typhoid fever was especially lowered in towns where refuse matters were removed most quickly. Among these methods for the prevention of the contamination of the soil and the air are the provision of water-tight house drains, their disconnexion from the public sewers or cesspools, their proper ventilation, and the provision of sanitary appliances and pipes which insure the speedy removal of the foul matters from the houses and prevent the escape into them of any foul air from the drains or sewers. All these matters have been so thoroughly discussed by me in other public lectures that it is quite unnecessary for me further to enlarge on them here.

There appear to be differences of opinion with regard to the disinfection of typhoid excreta; some advocate mixing them with sawdust or other absorbent material and burning them, whilst others are in favour of boiling them. On this subject I may quote Lieutenant-Colonel G. H. Younge, R.A.M.C., who wrote in the *British Medical Journal* of Jan. 18th, 1902: "When in India I tried the process of incineration of enteric excretions mixed with sawdust, but the attempt had to be discontinued as it was found impossible completely to burn the wet sawdust in any incinerator that could be extemporised. On the whole, therefore, I have a decided preference for sterilisation by boiling, as it is quite as effective, less expensive, and more rapid and convenient than incineration." This seems to me to be unanswerable and it is, in fact, obvious that the simplest and quickest way to disinfect liquid excreta must be to boil them.

In a remarkable report on the Results which have hitherto been gained in Various Parts of England by Works and Regulations designed to promote the Public Health Sir George Buchanan said: "Many of the public improvements have coincided with reduction of typhoid. Though not with absolute constancy, drying of the soil of a town and reduction in the crowding of houses have been followed by reduction of fever. Much more important appears to be the substitution of an ample supply of good water for a scanty and impure supply; other things being equal the towns in which this substitution has been completed have made most improvement. Merthyr is a conspicuous instance of a town where before any other important change had been made typhoid fell to a notable extent as soon as inspection and cleansing were adopted. It is, however, the purification of atmosphere from decomposing organic matters that has been most uniformly followed by a fall in the prevalence of typhoid. And this has occurred equally whether the purification has been brought about by the abolition of cesspools or by draining and drying 'middens.' Apparent exceptions, indeed, are found in certain towns (viz., Rugby, Carlisle, Chelmsford, and Worthing). But in these four towns and in no others sewage is received into pumping works at the outfall in such a way that sewer gases are necessarily much confined in the pipes. In the case of Worthing the defect of the outfall arrangement was most serious and in the absence of other exits sewer gases had demonstrably been forced into houses and outbreaks of typhoid had occurred as the demonstrable result thereof. In the other towns, though to an inferior degree, there were facilities for the same accident occurring. So that it appears that the four towns where fever has not been greatly reduced are so far from constituting an exception to the rule—that removal of organic impurity from the air has been followed by reduction of typhoid—that they even add strongly to the presumption that the rule is absolute and universal." (Ninth report of the medical officer of the Privy Council, 1866.)

In May, 1899, Dr. Saltet, professor of hygiene in the University of Amsterdam, read an important paper before the Epidemiological Society on a Study of Enteric Fever in the Netherlands during the period 1875 to 1894. He stated that "during the last decade the number of deaths from typhoid fever has been, generally speaking, on the decrease" and this to a greater extent than the decline in the general death-rate, for while he shows that the general death-rate in the Netherlands declined in the period under review from 23·3 per 1000 living during the quinquennium 1875 to 1879 to 20·0 during the quinquennium 1890–94, or an improvement of 14 per cent., that from continued fevers has declined from 60 per 100,000 to 22, or an improvement of 63 per cent., thus showing "that typhoid fever as a preventable disease *par excellence* has yielded more favourably to the improved condition of the times than other diseases." He then discusses the influence of density of population and comes to the conclusion that "the favourable factors of town life appear thus to outweigh the unfavourable conditions due to density of population." With regard to drinking-water he arrives at the interesting and unexpected conclusion that the death-rate from continued fevers is higher in communes supplied with water from the sandhills than in those with a river-supply, although it has decreased considerably in both; thus in those with the water-supply from the sandhills the death-rate from continued fevers was 60 per 100,000 in the first quinquennium and fell to 19 in the fourth quinquennium, whereas that in communes with the river-supply was 32 in the first quinquennium and fell to 15 in the fourth. Professor Saltet's explanation of this anomalous state of affairs is that "in communes on rivers a sufficient quantity of fresh water is always to be obtained independent of water systems. A number of communes with the ground-water system were, however, frequently suffering from a want of water. Now want of water means want of cleanliness, and it is not at all unlikely that *and* a better quality *and* a more adequate quantity of the drinking-water supply as well as the more liberal use of it have greatly assisted in bringing down the death-rate from fevers. The striking fact remains, however, that in communes with the ground-water system the death-rate from general causes is lower, whilst the mortality due from continued fevers is higher than in the river-water communes. This phenomenon impresses us even more forcibly if we consider that Asiatic cholera, a disease especially propagated by drinking-water, has in the Netherlands played the greatest havoc along the course of the rivers." This would make it seem probable that the increased amount of typhoid fever in communes with a water-supply from the sandhills was due to some other cause than the water, or else that the sources of water-supply are liable to surface contamination.

The hitherto published results of anti-typhoid inoculation

are so contradictory and, moreover, are based on such small numbers of cases that I do not think any good end would be attained by further alluding to them.

In preparing Tables III. to VI. I have been able to include the statistics for 1900 and so to make the tables complete to the end of the last century, owing to the courtesy of my friend Dr. J. F. W. Tatham, chief of the Statistical Department of the General Register Office. Table III. shows the remarkable diminution in the general death-rate of London during the last half of the last century. It will be seen from it that the average general death-rate from 1851 to 1870 was 24·1 per 1000 per annum and that it had gone down to 18·8 in the quinquennium 1896 to 1900; the dates at which the important Acts relating to the public health were passed are shown in the table.

TABLE III.—*London.*

Years.	Average death-rates per 1000 per annum.
1851–1870	24·1
Nuisance Removal Act, 1855, Sanitary Act, 1866.	
1871–1890	22·5
Public Health Act, London, 1891.	
1891–1895	20·2
1896–1900	18·8

In Table IV. the corresponding figures are shown with regard to the general death-rate in England and Wales. The average from 1849 to 1875 was 22·4 per 1000 per annum. The Public Health Act was passed in 1875 and after that the table shows a steady diminution of the death-rate until in the quinquennium 1896 to 1900 it was only 17·6.

TABLE IV.—*England and Wales.*

Years.	Average death-rates per 1000 per annum.
1849–1875	22·4
Public Health Act, 1875.	
1876–1880	20·8
1881–1885	19·4
1886–1890	18·9
1891–1895	18·7
1896–1900	17·6

Dr. Bulstrode prepared a most interesting chart and maps showing the annual death-rate from typhoid and continued fevers per 100,000 living in the counties of England and in North and South Wales during each of the decades 1871–80 and 1881–90. They show "that whilst enteric fever has been undergoing enormous diminution in this country, the areas of both its maximum and minimum incidence have remained practically the same during the 20 years 1871 to 1890, which have witnessed such great improvements in the sanitary circumstances of our towns and villages. The chart shows, amongst other things, that whereas this (typhoid and continued) fever death-rate in England and Wales was 43 per 100,000 living during the decennium 1871 to 1880, it had fallen to nearly half—viz., 22 per 100,000—during the decennium 1881 to 1890." (Sir R. Thorne, twenty-sixth report of the medical officer of the Local Government Board, 1896–97.)

TABLE V.—*Average Annual Death-rates from continued Fevers and Diarrhœa per 1,000,000 Persons living in England and Wales.*

Years.	Continued fevers (chiefly typhoid).	Diarrhœa.
1861–70	885	1076
1871–80	482	935
1881–90	235	674
1891–95	185	630
1896–1900	180	788

TABLE VI.—*Average Annual Rates of Mortality from Typhoid Fever per 1,000,000 Persons living in each Quinquennium from 1871 to 1900.*

—	1871–75.	1876–80.	1881–85.	1886–90.	1891–95.	1896–1900.
In England and Wales	354	278	218	180	176	176
London	256	234	236	150	136	148

Table V. shows that the rate of mortality in England and Wales for continued fevers (chiefly typhoid) has been reduced from 885 per 1,000,000 persons in 1861–70 to 180 in 1896–1900 and for diarrhœa from 1076 in 1861–70 to 630 in 1891–95, but that the latter rose again to 788 in 1896–1900; and Table VI. shows the steady diminution of the death-rate from typhoid fever alone during each quinquennium from 1871 to 1895 both in England and Wales and in London. It will be noticed that during the last quinquennium (1896–1900) the death-rate from this disease was the same in England and Wales as in the previous quinquennium (1891–95), thus showing no diminution, while in London there was actually an increase in 1896–1900, when the average rate was 148 per 1,000,000 persons, over that in 1891–95, when it was 136. This, as well as the increase in the diarrhœa rate, was due to an unusual prevalence of both these diseases in the years 1899 and 1900.

I have already referred to the remarkable diminution of the death-rate from typhoid fever at Munich owing to the improvements carried out under the advice of the late Professor Pettenkofer, a diminution which is even far more remarkable than the diminution in London and in this country generally.

From a paper on the Diminution of Typhoid Fever in Paris published in the *Revue Municipale* of Dec. 29th, 1900, I find that the death-rate from that disease per 1,000,000 persons living has diminished in a very notable manner, as shown by the following figures. In 1882 it was 1430; from 1883 to 1888 it was 581; from 1889 to 1894 it was 293; and from 1895 to 1900 it was 172. And this in spite of a recrudescence in 1899 and 1900, which was brought into prominent notice on account of the great Exhibition held in Paris in 1900 but which was shared by London and England generally and would not have been specially noticed had it not been for the Exhibition.

NOTE ON THE RELIEF OF A DISTENDED JOINT BY THE ESTABLISHMENT OF SUBCUTANEOUS LEAKAGE.[1]

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THIS communication is called a "note" because I have to speak from memory and not from recorded data. The cases which I recall occurred chiefly in my early days as surgeon to the Leeds General Infirmary, at a time when we had no very satisfactory system of preserving for ready reference the records of surgical cases.

CASE 1.—The first instance in which I deliberately employed this treatment was as follows. A young woman about 25 years of age was under my care on account of an acute distension of one knee attended with intense pain. The conditions suggested to my mind suppuration and the question whether I ought not to open and to drain the joint. As such a proceeding was at that time more or less on its trial I held a consultation with my colleague who agreed with me that pus was almost certainly present and that I should be justified in opening and draining the joint. As a commencement I punctured the joint carefully with the narrow curved bistoury of the period and by turning it sideways I allowed some of the fluid to escape. To my dismay the fluid was not pus but slightly turbid synovial fluid. After hesitating

[1] A paper read before the Leeds and West Riding Medico-Chirurgical Society on Feb. 28th, 1902.

for a minute what to do and with the fear before me which we had at that time of opening a joint that was not suppurating, I decided so to manœuvre the knife as to make an opening in the capsule about half an inch in length in order that the fluid might leak into the surrounding extra-articular tissues where it was likely to be absorbed. In order to render this process as thorough and rapid as possible I made three or four other punctures into separate regions of the synovial cavity, taking care that the openings in the skin were not larger than the width of the narrow blade, whilst the capsular openings were about half an inch in length. The result proved to be even better than I dared to hope. The pain ceased, the effusion disappeared, and the joint rapidly recovered. The idea occurred to me, no doubt, from having seen the effect of acupuncture of hydrocele in children, in which several leakage punctures allow the fluid to disappear into the cellular tissue and become absorbed. Also, I have some recollection that the older surgeons occasionally treated pleuritic effusion by acupuncture with a view to allowing the pleural fluid to leak into tissues outside the thorax and to become absorbed.

The case I shall next refer to occurred in private practice and of this I have notes.

CASE 2.—A boy, aged nine years, who was always delicate but who suffered from no known injury, began to walk with a slight limp which increased without much pain. There was arching of the back when the right limb was straight upon the bed. On March 6th, 1891, under ether, I made a subcutaneous incision through the capsule of the right hip-joint so as to establish a leakage, and at the same time I divided the tensor vaginæ femoris and the abductor longus tendon which were tense. On the 24th the immediate result seemed to be satisfactory. The patient was out-of-doors a good deal walking about and he slept and ate well. The report on April 15th was, "Going on well," but on May 10th it was, "Not so well, more pain." On Sept. 1st the note states, "Going on favourably, able to go about but walking lame." On Jan. 15th, 1892, the patient had relapsed and an abscess was forming in the front of the hip-joint. The head and neck of the bone were therefore excised, the head being eroded. In this case there was a temporary arrest of the synovial distress but the treatment eventually failed, probably because the focus of the disease was beneath the articular surface of the femur.

My colleague and former house surgeon, Mr. W. H. Brown, tells me that he well recollects one case of mine of distended elbow-joint in which subcutaneous leakage arrested the distension of the synovial membrane. My colleague, Mr. Harry Littlewood, remembers my conversations on this subject, and says that from them he deduced his practice in reference to operations on joints. When he opens a joint with a healthy, or comparatively healthy, synovial membrane, he is careful not to close entirely by suture the synovial cavity, but he leaves a sufficient opening to allow synovial effusion to leak into surrounding tissue where it is absorbed and does not become a source of injurious distension.

Remembering that some 20 years ago Dr. James Hardie, surgeon to the Manchester Infirmary, had proposed to read a paper at the meeting in Manchester of the British Medical Association on this or a kindred subject I wrote to ask him about it. He has kindly sent me a reply which he allows me to use:—

MY DEAR SIR,—You are quite right in thinking that I had at one time something to say about subcutaneous incision of joint capsule. I never read the paper, however, nor did I publish it. It had reference entirely, I think, to the hip. I had in several cases opened the distended capsule with a tenotome with great relief to suffering and, as I believed, with advantage as regards the progress of the case. My views as to the pathology of hip disease underwent a change about that time, however, as I came to the conclusion that in the great majority of cases it begins in the subchondral layer of bone and then affects the synovial membrane, instead of beginning in the latter. For that reason I came to regard early excision as the treatment.

JAMES HARDIE.

Perhaps some apology may be due from me for bringing forward a method of treatment which is probably only applicable to a case now and then under exceptional circumstances and in support of which I have such scanty data to produce. As, however, I am convinced that there is a possible sphere in which it may prove of value I think that it is right to place my views before the profession, hoping that the suggestion may sometimes and in other hands prove fruitful.

Leeds.

A CASE OF FAT-EMBOLISM AFTER FRACTURE, WHERE FAT WAS PRESENT IN THE SPUTUM AND URINE.[1]

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THE following account of a case of fat-embolism after fracture may prove of interest, for of recent years little attention has been directed to this subject and few cases have been recorded in this country.

A male, aged 43 years, was admitted into the Manchester Royal Infirmary on Nov. 8th, 1901, suffering from a compound fracture of the right tibia, about its middle, which was caused by direct violence, a bale of cotton having fallen across his leg a few hours previously. There was a small punctured wound at the seat of fracture, but very slight bruising, and no apparent displacement or comminution of the ends of the bone. The fracture was treated in the ordinary way, the wound being syringed with a solution of perchloride of mercury, a dry dressing being applied and the limb being put up on a back splint with a footpiece. On the following morning the patient was unusually drowsy and his friends who visited him noticed that there was a distinct impairment of his usual mental condition. In the evening he rambled slightly in his talk and made several attempts to get out of bed. His temperature was 100·4° F. On the 11th the drowsiness was more marked, so that he was with difficulty aroused. When awakened and raised in bed for the purpose of feeding he would quickly lapse into a state of somnolence, even while supported in the arms of a nurse. On several occasions he coughed up some blood-stained sputum. The temperature was 100°. On the 12th a number of minute globules were noticed by my house surgeon, Mr. H. S. Lister, floating on the surface of the urine. These were examined microscopically by Dr. W. E. Fothergill, director of the clinical laboratory, and were found to consist of fat, for when treated with osmic acid they became stained of a blackish colour; no blood-cells were noticed in the urine. The temperature was normal and afterwards remained so. On the 14th an examination of the blood-stained expectoration showed numerous fat-globules mixed with red blood-cells. Evidences of consolidation were found at the base of the right lung, an area of dulness about three inches in diameter being present. There was no dyspnœa or other signs of pulmonary obstruction. After this date the patient rapidly improved, the lung clearing and the expectoration becoming free from blood. No further evidence of fat was noticed either in the sputum or urine. The drowsiness and other mental symptoms gradually disappeared. He left the hospital at the end of a month wearing a plaster-of-Paris bandage, good union having taken place and the wound having healed without any suppuration.

Remarks.—The case is a good illustration of the condition described as fat-embolism, a complication occasionally observed in fractures, simple as well as compound, owing to absorption of broken-up fat-globules by the blood-vessels. It is believed that in consequence of the crushing or splintering of the bone the fat-globules of the medulla gain access to the venous circulation through openings in the vessels in the neighbourhood of the fracture, and these acting as emboli are carried on by the blood-stream until they become arrested in the capillaries of various tissues and organs, the organs most commonly affected being the brain, the lungs, and the kidneys.

It is probable that fat-embolism takes place more frequently than is generally supposed, the symptoms being overlooked in slight cases, and if it had not been for the careful observations of my house surgeon its presence might have not been recognised in this instance. The drowsiness and other mental symptoms which were noted for several days after the injury were undoubtedly due to interference with the cerebral circulation, owing to blocking of the capillaries of the brain by particles of fatty matter.

The presence of fat in the sputum and urine showed that the lungs and kidneys were also affected, these being the organs by means of which the fat becomes eliminated from the system when recovery takes place. In severe cases the

[1] A paper read at a meeting of the Manchester Pathological Society on April 16th, 1902.

cerebral and pulmonary circulation may become so seriously interfered with, owing to blocking of the vessels, that death results, the patient in the former case becoming comatose and in the latter suffering from dyspnœa and other signs of pulmonary obstruction. Some years ago I published in THE LANCET[2] a fatal case of compound fracture of both lower extremities where this complication was met with. A microscopical examination of the lungs after death showed extensive plugging with fatty emboli, their presence in the pulmonary capillaries being rendered evident by staining sections of the lung with osmic acid, and a figure was given showing the condition which was found.

This case and the one above recorded are the only two instances of fat-embolism which have come under my notice where its presence has been actually verified, and it would be interesting to ascertain what is the experience of surgeons generally with reference to the frequency of this condition as a complication of fractures.

Manchester.

SOME STATISTICS REGARDING THE EFFECT OF INOCULATION AGAINST TYPHOID FEVER IN SOUTH AFRICA.

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OF 250 officers who recently came before the Medical Board at 18, Victoria-street, London, S.W. (of which I am a member), invalided from South Africa on account of wounds and disease, I found that 112, or 44·8 per cent., had been inoculated against enteric fever; that 29, or 11·6 per cent., had had a previous attack of typhoid fever; and that 109, or 43·6 per cent., had not been inoculated or had a previous attack. Of the total number (250) 59, or 23·6 per cent., suffered from enteric fever in South Africa, but of these a considerable number were actually invalided on account of debility following enteric fever, so that this latter percentage cannot be put forward as representing the real proportion of officers so infected. It is, of course, considerably higher than the actual ratio. Of the 112 who were inoculated 32, or 28·5 per cent., suffered from typhoid fever; of the 29 who had had a previous attack only 3, or 10·3 per cent., had a second attack in South Africa; and of the 109 not inoculated 24, or 22 per cent., had attacks in South Africa. Of the 112 who were inoculated 102 had been inoculated once, with 30 cases, or 29·4 per cent.; and 10 with two cases, or 20·0 per cent., had been inoculated twice. In tabular form these figures appear as follows:—

TABLE I.

—	Number.	Cases.	Per cent.
Inoculated once	102	30	29·4
,, twice	10	2	20·0
Total inoculated	112	32	28·5
Previous attacks	29	3	10·3
Not inoculated	109	24	22·0
Totals	250	59	23·6

I wish to offer as few comments on my figures as possible, but it is only fair to state that there is a very general consensus of opinion among medical officers in South Africa that inoculated cases run a milder and more favourable course than the non-inoculated do. According to the statistics of Dr. H. H. Tooth this leads to a higher percentage (2·5 per cent.) of recoveries among men, and for obvious reasons it would probably be higher among officers. If this is so a group of invalided officers would contain a higher percentage of cases among the inoculated in the proportion of the higher percentage of recoveries.

[2] THE LANCET, July 10th, 1880, p. 47.

Assuming that inoculation affords a certain amount of protection against infection, as Professor Wright's statistics would seem to indicate, I have endeavoured to arrive at a conclusion as to how long that protection lasts. For that purpose I ascertained from each officer the dates of his inoculation and of his arrival in South Africa, when it is presumed that he became liable to infection, and the date of his attack of enteric fever. In all but one case the inoculation was performed on board ship on the way out—that is to say, 10 or 14 days before arrival in South Africa, and in the following tables the date of inoculation is ignored as complicating them unnecessarily, and it can be calculated from these data. The one exception was in the person of an officer who was inoculated twice before leaving England.

In the following table the first column gives the months after arrival in South Africa and the other columns the number of officers affected in each month after arrival, among the non-inoculated as well as among the inoculated, so as to obtain a basis for comparing their relative susceptibility at increasing periods after disembarkation. This table also shows the average time which elapsed between disembarkation and the attack. It shows that the average date of attack among the inoculated was 9·4 months (9·8 for those inoculated once and 6·5 for those inoculated twice) and 10·3 months among the not-inoculated. I made the calculation at several periods of the inquiry and found that it always maintained the same relation, showing obedience to some law affecting the figures.

TABLE II.—*Showing the Actuals attacked in each Month after Disembarkation in South Africa among Inoculated and Not-inoculated as well as the Average Time of Infection.*

Months.	Inoculated.			Not inoculated.
	Once.	Twice.	Total.	
1	—	1	1	—
2	—	—	—	2
3	7	—	7	7
4	1	1	2	2
5	3	2	5	1
6	4	—	4	2
7	3	—	3	2
8	1	—	1	—
9	5	—	5	3
10	2	—	2	1
11	2	1	3	3
12	4	—	4	2
More than a year.	14	1	15	16
Totals*	46	6	52	41
Aggregate of months	457	39	496	399
Average time in months	9·8	6·5	9·4	10·3

* These totals do not agree with those given in Table I, because this inquiry was begun before the other.

In order to see the force of these figures it is necessary to reduce them to percentages. This I have done in Table III., in which the figures given represent "progressive percentages." Thus among the 46 inoculated once there were seven cases in the third month after disembarkation, giving a percentage of 15·2. By the fifth month there had been 11 cases (including seven in the third month, one in the fourth and three in the fifth) giving a progressive percentage of 23·9. In the last column is shown the difference between the incidence of the disease among the not-inoculated and the inoculated. This column shows that the not-inoculated suffered more during the second, third, fourth, and fifth months than the inoculated did; and if those inoculated twice were excluded from the table the advantage would remain with the once inoculated up to and including the sixth month. Subsequently to that time the advantage lies with the not-inoculated, an advantage which at the end of the first year and subsequently amounts to 10 per cent.

TABLE III.—*Showing in Progressive Percentages the Numbers of Inoculated and Not-inoculated attacked by Typhoid Fever at Increasing Periods after Disembarkation.*

Months.	Inoculated.			Not inoculated.	Differences.
	Once.	Twice.	Total.		
1	—	16·6	1·9	—	- 1·9
2	—	16·6	1·9	4·9	+ 3·0
3	15·2	16·6	15·4	21·9	+ 6·5
4	17·4	33·3	19·2	26·8	+ 7·6
5	23·9	66·6	28·8	29·3	+ 0·5
6	32·5	66·6	36·5	34·1	- 2·4
7	39·1	66·6	42·3	39·0	- 3·3
8	41·3	66·6	44·2	39·0	- 5·2
9	52·2	66·6	53·8	46·3	- 7·5
10	56·5	66·6	57·6	48·8	- 8·8
11	60·9	83·3	63·5	56·1	- 7·4
12	69·5	83·3	71·1	60·9	- 10·2
More than a year.	30·5	16·6	28·9	39·1	+ 10·2
—	100	100	100	100	—

The figures regarding a second inoculation are too small to form ground for any decisive opinion as to its advisability. Table I. would seem to indicate a smaller liability to attack in the long run, while Tables II. and III. point to a greater liability on exposure to infection soon after the operation.

The following are facts of general interest. A medical officer found six months after inoculation that his blood gave a well-marked agglutinative reaction. A fortnight afterwards he was in bed suffering from enteric fever, showing, as is well known, that the presence of agglutinins is no guarantee of that of alexins. Dr. B—— was inoculated twice in February and twice in June, 1897; he was again inoculated twice in February, 1900. In October, 1900, he had an attack of enteric fever in South Africa followed by a relapse and thrombosis. In May, 1901, he had a second attack of enteric fever again followed by thrombosis. When his blood was examined in London at the end of 1901 it gave no agglutinative reaction nor had it any effect on the motility of the bacillus typhosus in six hours. In three out of four cases returned in South Africa as simple continued fever a positive Widal reaction was found.

I offer these figures as a contribution to our knowledge of the prophylactic effect of inoculation against typhoid fever pending the compilation of official statistics on a large scale which, it is hoped, will be possible after the conclusion of the war.

Bickenhall Mansions, W.

AN UNDESCRIBED URINARY DEPOSIT: MONOHYDRIC MAGNESIUM PHOSPHATE.

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SOME time ago my colleague Mr. F. T. Paul submitted to me for examination some of the urine of a patient whom he had seen in consultation with Mr. Owen Bowen of Liverpool. The circumstances of the case were briefly as follows.

The patient was a man who suffered from dilatation of the stomach and he felt great relief from his distress by taking magnesia. Carbonate of magnesium with bicarbonate of sodium was prescribed for him in moderate doses but he also took "powdered magnesia" on his own account, so that it is impossible to say how much he was taking altogether. Mr. Paul proposed to perform an operation, but the patient died quite suddenly, presumably from perforation of the stomach, a few days after his admission to the Royal Infirmary and no post-mortem examination was allowed.

The urine which was given to me was alkaline and it effervesced with acids, but it was quite free from any odour of decomposition. It deposited an abundant sediment consisting of sparkling crystals which under the microscope were seen to be elongated needles so extremely narrow that even under objective No. 7 Hartnach many of them seemed

Crystals of monohydric magnesium phosphate in urine. From a micro-photograph by the author.

to fulfil Euclid's definition of a mathematical line. A considerable quantity of the deposit was collected, washed on a filter, and submitted to various tests. It dissolved completely in acetic acid without effervescence but was insoluble in alkalies. It yielded the reactions of a salt of magnesium, and after solution in dilute acid it gave a yellow precipitate with ammonium molybdate and with ammonio-nitrate of silver,—reactions which showed it to be an ortho-phosphate.

I may be permitted to recall the fact that ortho-phosphoric acid is capable of forming three orders of salts, according as one, two, or three of its hydrogen atoms are replaced by a metallic atom. Appended are the formulæ of the acid and of the three orders of salts which it can form by combination with sodium and magnesium respectively:—

H_3PO_4	Ortho-phosphoric acid.	Na_2HPO_4 / $MgHPO_4$	Monohydric phosphate.
NaH_2PO_4 / $Mg(H_2PO_4)_2$	Dihydric phosphate.	Na_3PO_4 / $Mg_3(PO_4)_2$	Normal phosphate.

The monohydric and the normal magnesium phosphates are scarcely, if at all, soluble in water. They are readily distinguished from each other by heating them to 400° C. on platinum foil, when the monohydric phosphate is converted into pyrophosphate by the elimination of the elements of water, according to the following equation: $2MgHPO_4 = Mg_2P_2O_7 + H_2O$. The pyrophosphate, $Mg_2P_2O_7$, is recognised by its solution in dilute nitric acid giving a white precipitate with ammonio-nitrate of silver. Normal phosphate when heated undergoes no change.

The deposit which forms the subject of the present communication was shown to be a monohydric phosphate, by its undergoing the change into pyrophosphate when heated on platinum foil.

The occurrence of monohydric magnesium phosphate as a deposit in the urine is not alluded to in any of the ordinary text-books, neither is it mentioned in Huppert's last edition of Neubauer and Vogel's great work on the urine, nor in Rieder and Delépine's more recent "Atlas of Urinary Deposits." Both these works, however, admit the occasional appearance of crystals of trimagnesium (normal) phosphate as a rare occurrence.

It seems obvious that the magnesium forming the deposit

in the present case was derived from that which had been swallowed for the relief of the gastric distress. Owing to the dilated condition of the stomach we must conclude that its contents were unduly retained, so that the salts were absorbed into the blood instead of passing on into the intestines and thence escaped through the kidneys.

I have examined the urine in several instances in which magnesia was being taken, some being cases of moderate dilatation of the stomach, but have failed to find any deposit of the kind I have described; I have also analysed several phosphatic calculi in the museum of University College, Liverpool, but have not succeeded in finding any of the monohydric magnesium phosphate as a constituent.

Apart from the interest attaching to all abnormal states of the urine I think that the present communication is not without its bearings on practical medicine. In the first place, unless the nature and mode of origin of these crystals[1] were understood their discovery in the urine might give rise to misapprehension and perhaps to groundless alarm in the mind of the physician; and, secondly, their presence seems to indicate that the stomach meets with difficulty in emptying itself and so might suggest the existence of serious organic disease.

Finally, we have to ask ourselves, in the light of the present case, whether these crystals may not sometimes coalesce so as to form massive concretions; whether, in fact, the free administration of magnesia may not be an occasional factor in the production of phosphatic urinary calculi.

Liverpool.

A CASE OF OVARIAN TUMOUR WITH SPONTANEOUS RUPTURE AND ŒDEMA OF THE LEGS SIMULATING MALIGNANCY.

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A PATIENT, single, aged 61 years, was sent to me in January, 1902, by Mr. F. J. Hart of Much Wenlock complaining of an abdominal swelling and œdema of the legs. She stated that she had had the change of life eight years previously when she was 53 years of age, that five months previously she had noticed a stiffness and for two months a swelling in the abdomen which had latterly increased very considerably in size. During this same period both legs had become very œdematous which had rendered locomotion difficult and in consequence had confined her to bed. There was no history of any injury or fall but in November pain was complained of in the region of the umbilicus with difficulty in the opening of the bowels. For many years weakness of the bladder had given trouble, producing at times retention of urine with incontinence. On examination the patient, who was naturally spare, was seen to have a large abdominal tumour rising from out of the pelvis and on palpation it was felt to reach to one inch above the umbilicus; it was hard, tense, and fluctuating in places. Above the tumour and in the right hypochondrium and loin fluctuation was obtained as of free fluid in the peritoneal cavity. By vaginal examination the tumour was felt in front and was found to be displacing the uterus backwards. Both legs were markedly œdematous, especially the right. There were no enlarged glands to be felt or prominent veins on the abdomen to be seen, nor was the abdominal wall œdematous. The urine was pale, neutral, and contained no albumin or sugar. The diagnosis made was one of malignant ovarian tumour with free fluid in the peritoneal cavity and pressure on the iliac veins. At the operation on Jan. 17th, on opening the abdomen, colloid material of gelatinous consistency and amounting to about one pint was found free in the peritoneal cavity. A large trocar was inserted into the tumour but owing to the fluid being too viscid it would not run, so that it had to be removed by ladling it out with the hand. The tumour was a left-sided multilocular ovarian cyst and its pedicle was ligatured in the usual way; the pedicle was not in any way twisted. The peritoneal cavity had to be flushed in order to bring up to the surface the remnants of the sticky lumps of colloid. The peritoneum was everywhere injected, covered with lymph, and showing the results of slight peritonitis. The right ovary was small and atrophic and was not removed. The patient made a satisfactory recovery from the operation, only during convalescence catheterism had to be resorted to on account of the weak and atrophic condition of the bladder. Pathologically the tumour was a glandular multilocular cyst of the left ovary; the contents consisted of a thick tenacious colloid and amounted to about half a bucketful; on most careful examination no point of rupture of the cyst wall could be detected.

The case is interesting and worthy of record on account of (1) the spontaneous rupture of the cyst, allowing of the escape of some of its contents into the peritoneal cavity; (2) œdema of both legs as a pressure symptom; and (3) the difficulty in diagnosis.

1. Rupture of an ovarian cyst is not often met with in a simple tumour, owing to the fact that all such cases are recognised and are dealt with early and before the tension of the fluid within the cysts has reached the point of rupture. In this case the cyst wall was found to have been distended and thinned out in several places. In the absence of any history of injury or fall, this complication must be called "spontaneous" as opposed to "traumatic," and may be accounted for by the rapidity of growth of the tumour with increased tension of its contents. It seems probable that the colloid had been free in the peritoneal cavity for two months, for at this time complaint was made of pain in the umbilical region together with great difficulty in obtaining an action of the bowels, and this was further borne out at the time of the operation when a peritonitis of some weeks' duration was observed, the presence of simple colloid in the abdomen in the absence of any bacterial infection having produced a simple inflammation of the peritoneum with no constitutional poisoning effects. This fact is of particular interest to the abdominal surgeon and it demonstrates that cyst contents and the like of a simple nature are perfectly harmless provided that germs have not been introduced from without.

2. Œdema of both legs as a pressure symptom is not often seen nowadays for the same reason as that before mentioned. The cause of the œdema was on account of the heavy weight of the tumours pressing on the iliac veins, the contents being large in amount and thick, if not semi-solid, in consistency, and this explanation seemed satisfactory when on removal of the tumour the œdema soon disappeared.

3. With regard to the third point the diagnosis made of this case was one of malignant disease of the ovary which rested on (*a*) the rapidity of growth, for according to the history a swelling of the abdomen had been noticed for two months only although a "stiffness" had been felt somewhat longer; (*b*) the hard firm character of parts of the tumour suggestive of solidity of growth; (*c*) fluctuation above the tumour, as of free fluid in the peritoneal cavity, a condition which of itself is highly suggestive of malignancy although met with in some simple enlargements of the ovary; and (*d*) œdema of the legs, a symptom more often met with in malignant ovarian than in simple tumours although not pathognomonic of malignancy.

Birmingham.

"IDIOPATHIC," OR CONGENITAL, HEREDITARY AND FAMILY HÆMATURIA.[1]

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IDIOPATHIC hæmaturia is not mentioned in text-books nor have I found any reference to it in medical literature. Dr. W. H. W. Attlee, however, has recorded "three cases of recurrent hæmaturia occurring in one family"[2] which I believe to be of the same nature as those which form the subject of this paper. The "essential renal hæmaturia" of

[1] These crystals were demonstrated and described before the Royal Medical and Chirurgical Society of London on Nov. 27th, 1900.

[1] A paper read before the Harveian Society of London on April 24th, 1902.

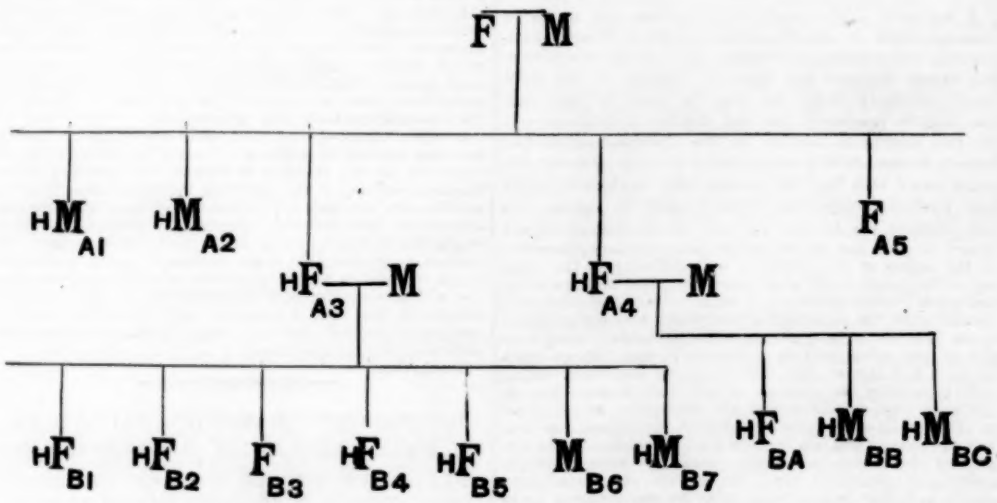
[2] St. Bartholomew's Hospital Journal, December, 1901.

Debairieux, in which hæmorrhage occurs from apparently healthy kidneys, is doubtless closely related to idiopathic hæmaturia, but lacks the hereditary congenital and familial characters of the latter affection.[3]

I have knowledge of the existence of idiopathic hæmaturia in 12 persons. Eight of these are brothers and sisters or first cousins. Their mothers are two sisters who are themselves subject to this complaint. These two sisters had two brothers, both of whom were similarly affected. The complaint is therefore familial and hereditary but at present has only descended to the second generation. It is impossible yet to say whether it may or may not be further transmitted. Seven of those affected have been females and five males. So far as my own cases are concerned, hæmaturia has only been inherited through the maternal side, but Dr. Attlee's cases (to which further reference will be made) suggest that it may also be inherited from the male parent. In all my cases it appears to be congenital or has been noticed shortly after birth. The first generation of the two families mentioned consisted of two brothers and three sisters, all of whom, except one sister, have been liable to hæmaturia from birth. The two brothers died between 20 and 30 years ago, aged four and a half and 11 years respectively. The exact cause of their deaths cannot be ascertained. The two sisters affected are now aged 40 years and 30 years respectively, are married, and have issue. The elder has seven children, of whom four girls, aged 18, 15, 13, and 10 years, and one boy, aged six years, are subject to hæmaturia, whilst one girl and one boy escape. The younger sister has two boys, aged eight years and three years respectively, and one girl, aged 11 years, all of whom are affected. The third sister, who is free from the complaint, is unmarried. The eldest daughter of the elder married sister suffers from eczema and spasmodic asthma as well as from hæmaturia. The third daughter has had attacks of epistaxis and hæmatemesis but no hæmaturia. Gout and rheumatism are said to exist on the maternal side of these families but no other family complaint. The relationship of the persons affected is shown in the annexed table of descent.

The characteristics of idiopathic hæmaturia may thus be summarised: 1. It is hereditary, familial, and congenital. 2. The hæmaturia may be persistent for many years but may vary in extent. In some cases it may cease for a time, but in all it is apt to recur or to increase in paroxysmal attacks or exacerbations. For instance, in one of my cases the urine examined almost weekly for upwards of two years has never failed to contain blood visible to the naked eye and to give a marked reaction with ozonic ether and guaiacum. Its colour varies from that of old gold tinged with red to the bright scarlet of oxyhæmoglobin. In another, blood is always present but can only be detected on microscopical examination except when exacerbations occur. At these times the urine may resemble almost pure arterial blood. It is not "smoky" in appearance but is "red," the colour being due to oxyhæmoglobin not methhæmoglobin. Normal red blood corpuscles and blood casts can always be found under the microscope; so the colour is not due to hæmoglobinuria. The amount of blood passed during exacerbations is always far greater than is ever seen in cases of nephritis, and resembles in profuseness the blood passed in cases of renal calculus or new growth. 3. All cases are liable to paroxysmal exacerbations of hæmaturia which are usually accompanied by slight pyrexia, malaise, headache, vomiting, and slight pains in the back or limbs. The exacerbations are often attributed to "catching cold" and are associated with slight bronchial catarrh, or with trivial ailments, such as toothache, earache, or tonsillitis. In some cases articles of diet—such as black currants, asparagus, strawberries, claret, and perhaps rhubarb—have been held to produce them. But the exacerbation may occur without complications and in the absence of special causes. The duration of these exacerbations is usually several days but seldom exceeds a week or at most a fortnight, and after the first few days the blood gradually lessens in amount. They have no law of periodicity or of frequency. They may occur at intervals of weeks, months, or years, but they appear to become less frequent after the first decade has been passed. They occur with extreme suddenness by day or by night and are not influenced by posture. Extremes of hot or cold weather seem to give rise to them. 4. Idiopathic hæmaturia is not associated with œdema nor with ascites nor with the cardio-vascular changes following ordinary nephritis. Except at times when exacerbations occur the subjects appear to be, and are, in perfect health. There may be temporary anæmia after an exacerbation, but it is not profound or lasting. 5. The hæmorrhage is not due to the presence of uric acid or of oxalates. A few crystals of these substances may

TABLE OF DESCENT.



In the above table F = female and M = male. The first pair had five children marked A_1, A_2, and so on. Of these 5 children those marked H in addition suffered from hæmaturia. Two females of the A group—namely, A_3 and A_4—both being hæmaturic, married and had children. A_3 had 7 children marked B_1 and so on. Of these 7 children 5 are hæmaturic. A_4 had 3 children marked BA, BB, and BC, all of whom are hæmaturic.

I have personal acquaintance with only three members of the families—namely, with the elder married sister and with her second daughter and youngest boy. I am informed by their medical attendant that the second married sister and her three children, whom I have not seen, are liable to attacks of hæmaturia which in all respects resemble those which affect my own patients.

[3] Cf. also Dr. J. H. Bryant, Clinical Journal, July 25th, 1900, p. 214.

often be found on microscopical examination, but free gravel is never passed, neither is there any excess of uric acid in solution. The amount of urea passed is normal. 6. The specific gravity of the urine is not unduly low. It varies from 1015 to 1030. The quantity of urine passed is not above nor below normal. The reaction is acid or neutral. The urine is nearly always albuminous, the albumin varying from one-twentieth to one-fourth of its bulk. Sometimes it is in accordance with the amount of blood present, at others it exceeds it. Nucleo-albumin is usually passed as well. The sediment nearly always contains free normal red blood corpuscles and tubular blood casts in more or less abundance, but never hyaline casts. Finally, none of the subjects of idiopathic hæmaturia is a "bleeder." One of them recently had some adenoid vegetations removed and the hæmorrhage caused was neither profuse nor prolonged. None of them suffers from Raynaud's disease or from purpura. Scarlet fever can be excluded as a cause in all cases and also calculus, new growth, congenital syphilis, renal tuberculosis, and all forms of nephritis. The kidneys are not moveable, palpable, nor tender, and there is no definite nor constant local pain.

CASE 1.—This patient, now aged six years, has been under observation for three years. He was nursed until he was nine months old and was then fed on Savory and Moore's food and cow's milk. At the age of three months he suffered from slight eczema of the scalp and face, seemed weakly, and had occasional attacks of diarrhœa and vomiting. From the first his urine was noticed to be blood-red in colour from time to time. But this attracted little attention as it was known to be a family affection. Advice was sought chiefly because of nocturnal and diurnal enuresis and frequency of micturition. He is a healthy-looking, ruddy and chubby child, full of life and spirits. The heart and pulse are normal; the kidneys are not palpable. There is no renal tenderness nor pain and no trace of œdema at any time. The urine examined at almost weekly intervals for about two years has never been free from blood. Reaction is subacid or neutral. Its specific gravity is from 1015 to 1030. The colour varies from old reddish gold to bright blood-red. The blood is always discernible by the naked eye. The urine is never smoky in appearance and Dr. Archibald E. Garrod, who kindly examined it, found that the colour was due to oxyhæmoglobin, not methhæmoglobin. Uric acid is never passed as gravel, and quantitative analysis by Dr. Garrod showed it to be diminished rather than increased in solution. He estimated the total amount passed in 24 hours as 0·150 gramme on one occasion and 0·1629 gramme on another (Hopkin's method was used). 100 cubic centimetres contained 0·0410 gramme of uric acid on one occasion and 0·038 gramme on another. The deposit usually contains a few crystals of uric acid or oxalates, many red blood corpuscles and blood casts, but no hyaline casts. The total quantity passed is not above the average. Albumin is always present in quantities varying with the amount of blood present. The average content of albumin is about one-twelfth. The urine almost always contains nucleo-albumin as well. During the past three years the child has had periods, lasting about a week and occurring every two or three months, in which the blood is greatly increased in amount. I have never seen him at such times, but gather from his mother's description that he has usually some slight malaise; his tongue becomes furred and he may be restless and may scream in his sleep. The exacerbations of hæmaturia are often preceded and accompanied by enuresis and frequency of micturition. They are often associated with "catching cold" or some slight ailment such as toothache or earache. After vaccination the urine was said to improve in appearance as the arm got better. On the other hand, during an outbreak of eczema the urine was not dark until the rash was fading. Pertussis, which he had for six weeks, "did not upset him nearly as much as might be expected." Influenza increased the flow of blood. Extremes of hot or cold weather always render him more liable to attacks. The hæmaturia is not more marked in diurnal than in nocturnal urine. The effect on his general health does not seem to be great. His mother says that "his spirits never seem to fail; he is as bright and merry as possible even when the urine is very bad." The attacks do not seem to be induced by any particular articles of diet except by strawberries and asparagus. Black currants, which used to produce hæmaturia in his brother and in two sisters, had no effect on him. Gooseberries, raspberries, and grapes agree with him; rhubarb has never been given to him. He seems to thrive on ordinary diet.

Treatment.—Hazeline, oil of turpentine, calcium chloride, and gallic and sulphuric acid have been used without much effect on the hæmorrhage. The only drug which seems to cut short the attacks is substantia supra-renalis in one and quarter-grain doses three or four times a day. Urotropin seemed to increase frequency of micturition and incontinence, but these discomforts are speedily relieved by a few doses of tincture of hyoscyamus with citrate of potash and infusion of buchu. Beyond keeping him indoors and lying down during the exacerbations little has been done and more seems unnecessary in the way of treatment.

CASE 2.—This patient, now aged 15 years (the sister of the patient in the preceding case), has also been under observation for three years. The urine examined on many occasions during that time has never failed to contain blood and albumin, but as a rule the blood is less in amount than it is in the previous case and there is rather more albumin. The average amount of albumin is about one-tenth; sometimes it falls to one-twentieth part. Nucleo-albumin is also present. As a rule the blood can only be detected by microscopical examination, when fragments of blood casts and blood corpuscles are found, but no hyaline or true granular casts. The reaction is acid or neutral. The specific gravity is from 1015 to 1025. Free gravel is never passed and Dr. Garrod estimated the quantity of uric acid in solution as about the same as in the previous case—namely, at about 0·0412 gramme in 100 cubic centimetres. The patient had a typical attack or exacerbation of hæmaturia two years ago but never since. The practitioner who then saw her kindly sent me the following particulars. In February, 1900, she had a severe sore-throat which, however, lasted only a few days and she then seemed to be well. There was no rash and she had had scarlet fever four years previously. About a week after the throat became well the urine was noticed to be getting darker and a night or two later she was violently sick and she passed a quantity of bright scarlet urine which was practically pure blood. The tongue was brown and dry, the temperature was 102° F., and she complained of headache, but of no other pain. The temperature gradually fell and the urine regained its normal appearance in about a fortnight. There was never any trace of œdema. She is a well grown and fairly healthy looking girl, though slightly anæmic. The heart is normal in position, size, and sounds. The pulse tension is not unduly high. The kidneys are not palpable nor is there any renal tenderness. Quite recently she has had some adenoids removed. The hæmorrhage was not excessive or prolonged, which disproves the existence of hæmophilia in this case. The hæmaturia was not affected by the operation. She prefers butcher's meat to any other article of diet and cannot take milk without a tendency to vomiting. Black currants are said to induce major attacks of hæmaturia in her case as in other members of the family. Of the other members of the family I can say but little. The mother of the patients (Cases 1 and 2), who is now aged about 40 years, states that as long as she can remember she has been subject to such attacks as her children have had and that as a child she was always considered delicate in consequence. The attacks, she says, were always produced by black currants or by claret, but they occurred also in presence of any ordinary slight ailment. The last occasion on which severe hæmaturia occurred was six years ago, shortly after the birth of her youngest child (the patient in Case 1). She has not had any further attack of hæmaturia since then. She has not complained of being out of health, as far as I know, for the last three years, and she always appears to be well, active, and energetic.

Other cases of apparently similar nature.—Dr. Attlee gives in the paper to which attention has been drawn in the beginning of this article a succinct account of three cases of recurrent hæmaturia occurring in one family. The patients were females, aged five and a half, four and a half, and two years and four months respectively, and were admitted to the Metropolitan Hospital under the care of Dr. Arthur D. Davies and Dr. A. Haig during the year 1901. The father died, aged 30 years, from uræmia. The mother seemed to be a perfectly healthy woman. All these children were well nourished and they appeared to be in perfect health. Scarlet fever could be excluded in all of them and none exhibited any definite signs

of nephritis or of cardio-vascular changes. Calculus could be excluded and also new growth and tuberculosis in all cases. One of them, aged four and a half years, had four attacks of hæmaturia in which the urine became bright-red between April and December, 1901. The child had been subject to epileptic fits since the age of 11 months but the hæmaturia was preceded by a fit on one occasion only. The attacks of hæmaturia were ushered in by malaise, sometimes by pain in the legs, or by vomiting and slight pyrexia. A typical exacerbation is thus described after a period during which the child had seemed quite well except that the urine contained a faint trace of blood: "On Dec. 29th, 1901, she suddenly complained of not feeling well. She had no pain and no fit. The temperature rose to 101·8° and about six hours afterwards the urine was again bright-red. The temperature kept up for two days, then became normal and continued so. The blood decreased to a mere trace and then remained stationary." The urine was always acid and averaged 20 ounces per diem. The specific gravity was from 1026 to 1015. Albumin and blood were always present and occasionally granular casts.

Another of these sisters, aged five and a half years, was admitted to hospital on May 20th, 1901. On May 16th she complained of headache and pain in the right side of the chest and she vomited three times. On admission she had slight bronchitis, the temperature was 100·6° F., and the urine was smoky, acid, of specific gravity 1017, and contained a cloud of albumin and a considerable amount of blood, blood corpuscles, and blood casts, but no crystals. After five days the temperature became normal and remained so; the urine contained no blood after June 6th but a trace of albumin. In the following December the urine contained a cloud of albumin and blood but nothing else was found under the microscope.

The third child, aged two years and four months, vomited twice on May 31st and again frequently on June 1st, when her temperature rose to 101·8° F. On the evening of that day the urine was found to be scanty, loaded with albumin, and to contain much blood. The pyrexia continued until June 4th when the temperature gradually fell to normal. The amount of blood rapidly decreased and on June 6th there was none to be found but a trace of albumin existed until her discharge from hospital on July 8th. The urine was always acid and the specific gravity averaged 1017. A fair quantity was always passed after June 5th. Granular and epithelial casts were passed on two occasions but no crystals.

There can be little doubt that these cases are of the same nature as my own. It is true that evidence of the congenital tendency to hæmaturia is wanting, the youngest child being of the age of two years and four months when hæmaturia was first noticed. But hæmaturia may have existed long before, though in so slight a degree as to escape detection. The amount of blood present in the urine in my second case was so small for several months after the patient first came under observation that I doubted whether she shared the family proclivity until the typical attack of profuse hæmaturia took place. The fact that the father of Dr. Attlee's patients died, aged 30 years, from uræmia is of significant interest. It is possible that he also suffered from idiopathic hæmaturia. If so the prognosis in such cases must be guarded although the affection does not seem to endanger life or even health as a general rule. It will be observed that in Dr. Attlee's patients the inheritance is from the father and not from the mother as in my own cases.

The explanation of these mysterious cases remains to be discussed. The fact that the hæmaturia is congenital, or at all events, noticed shortly after birth, excludes all the ordinary or known causes of such hæmorrhage. The most reasonable supposition is that there is some inherent weakness or varicosity of the walls of the renal vessels leading to what has been called renal hæmophilia[4] or renal epistaxis. Or the vaso-motor system may be at fault (angio-neurosis), in which case the complaint might be grouped with cyclical or postural albuminuria.[5] But, as already mentioned, the hæmaturia is in no sense postural. The exacerbations occur as often during the night or whilst the patient is at rest in bed as by day when he is up and about.

[4] Senator, Broca, Passet.

[5] Mr. Hurry Fenwick has found varicosity of the papillary plexus in cases of painless unilateral hæmaturia in young adults and has cured them by papillectomy (Brit. Med. Jour., vol. i., 1900, p. 248).

The diagnosis of idiopathic hæmaturia rests on the personal and family history; on the occurrence of the febrile exacerbations in which the hæmaturia far exceeds that of acute nephritis; on the absence of œdema, dropsy, and cardio-vascular changes; and, finally, on the absence of any of the well-known causes of hæmaturia.

Upper Berkeley-street, W.

SCURVY DEVELOPING IN A RICKETY BOY, AGED FIVE AND A HALF YEARS.[1]

BY GEORGE CARPENTER, M.D. LOND.,
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THE patient, a boy, aged five and a half years, whom I saw for the first time on Feb. 24th, 1902, was breast-fed but was not weaned until 18 months of age. When at the age of 12 months he began to walk he was found to be rickety. According to his mother he was always "too heavy for his legs" which were gradually becoming more and more bent. About nine months previously he commenced to complain of pain in the arms and chest and especially in the legs and he did not like to be touched; he attended school, however, up to within six months before. He last walked six weeks previously, when he hobbled from one chair to another, but latterly he had reclined in one position, either in bed or on a chair. For the most part he was kept indoors and had been gradually getting paler. For about a week he had cried on passing urine but no blood had been detected in it. He had always been constipated; the motions were free from blood. He had always had peculiar ideas about his food. He would eat bread-and-sugar and occasionally a little butter, but he objected to milk, though he could drink tea with milk in it. He ate fried or roast meat but the meat had to be dry and he would not touch gravy or meat-juice. Vegetables he always refused—they made him sick—and he had never eaten fruit of any kind. He liked suet pudding and took milk-puddings occasionally. Apart from what has been related nothing worthy of note occurred as regards infantile disorders. His father and mother had both suffered from rheumatic fever. He had four brothers and sisters, two being older than himself, and the youngest was an infant three months old.

On examination the patient was found to be a well-nourished, placid, anæmic child who remained quiet if undisturbed but when the couch was moved or his body was approached for examination he cried out. His legs were flexed on the thighs and the thighs on the abdomen. There was very decided tenderness all over the trunk and limbs, especially the legs. The front of the left shin had lost its sharp outline and was nodulated and the bone was bowed. The right tibia was decidedly bowed and its free edge was thickened. When he was not paying attention the shin-bones could be squeezed without causing him pain. The femora were not thickened. When his attention was drawn to the fact that they were being manipulated he cried out, but not otherwise. His muscles were flabby, especially those of the legs; they were free from indurations. The tenderness and paretic condition of the lower extremities of the child, combined with his behaviour, led me to suspect scurvy and to examine his mouth, although no complaints had been made of this. The mucous membrane generally was pale. At the junction of the incisor, the canine, and the first temporary molar teeth with the gums there was a thin broken line of purple discolouration which broadened out at the last-mentioned teeth and over the second molar teeth expanded into a purple epulis-like overgrowth of the gums which almost obliterated these teeth. The gums did not bleed on pressure. The body was covered with petechiæ, mostly, apparently, originating in flea-bites, and there was a small bruise over the left shin. The head was large but was not characteristic of rickets and the anterior fontanelle was closed. The ribs were beaded and displayed a prominent rosary but in spite of this the chest was of fair shape. The ends of the wrists were knobby and the ankles and knees were obviously enlarged. The long bones of the lower

[1] A paper read before the Society for the Study of Disease of Children on March 21st, 1902.

extremities were bent and the curves fitted into one another when the limbs were in a position of rest. The femora were bent antero-posteriorly at the junction of the lower and middle thirds and the tibiæ at the lower third. So far as could be determined by a physical examination all the patient's organs were healthy. An examination of the blood showed in the fresh films typical rouleaux formation and an absence of microcytes and poikilocytes; stained films appeared to be normal. The red blood corpuscles numbered 4,733,000 per cubic millimetre, or 94·6 per cent. The hæmoglobin was 60 per cent. and the colour index was 0·7. The white corpuscles numbered 8300 per cubic millimetre, a ratio of 1 in 570. The boy was admitted to the hospital under my care on Feb. 24th. With the varied diet he obtained there, which he was compelled to take, coupled with orange-juice, the gums quickly recovered, and by March 16th the limbs were quite free from tenderness but he could not stand without assistance.

This case of characteristic scurvy of infantile type is interesting by reason of the age of the patient. Such cases mostly arise between the ages of seven and 14 months, and usually about the ninth or tenth month. The youngest case recorded by Dr. A. Matheson of Neillsville, Wisconsin, was in an infant only three weeks old; it was breast-fed and the case ended fatally. After two years of age it is decidedly quite out of the common to meet with such an instance as that just recorded with its typical gum lesions. Although this is so I do think—and I would again call attention to the fact—that some of the cases met with in older children suffering from "*simple* hæmaturia" (let me call it this for want of a better description), as also some cases of purpura, mostly unaccompanied by gum lesions and thereby passing unrecognised, are solely due to a deficient dietary, and are therefore essentially scorbutic in origin. These children are undoubtedly cured by a change to a proper mixed dietary in the hospital wards without any adjuncts. I have seen this over and over again. Members of the Society for the Study of Diseases in Children may possibly remember that last year I called attention to this when Mr. D'Arcy Power showed a case of paroxysmal hæmaturia in a boy nine years of age which in the sequel was proved to be an undoubted case of scurvy by reason of a subsequent but tardy development of spongy gums. Further, so marked a case of active rickets at this period of life is unusual and it is of interest from that point of view also, although its association with scurvy must be looked upon as an accidental one merely. Children with scurvy are not necessarily rickety, though rickets is found in about half the number of cases coming under observation; nor are they necessarily anæmic, though in this respect they are more often so than not.

Regarding the etiology of infantile scurvy it is thought on all sides that the chief, if, indeed, not the only, cause is a dietetic one. In the case of this child, for instance, there can be no doubt that his dietary was a restricted and an unnatural one by reason of the absence of fresh vegetables or their equivalent. He did, however, take milk occasionally in the shape of milk-puddings and mixed with his tea, and he did, according to his mother, have meat twice a day, though it is stated that he liked his meat "dry." This child, apart from his fads as regards food, had similar food to that of the other children at home who remained perfectly healthy under a more varied *menu*.

A study of reported cases, coupled with a clinical experience spreading over a period of years, makes it clear to my mind that no single article of diet is capable of producing scurvy with certainty, though it is abundantly clear that the various proprietary foods and milk-preparations are flagrant offenders. The personal element in the case of infants and children has always to be taken into consideration, for it is a not unimportant factor in determining the onset of this disorder. Thus several infantile members of a family may be suitably reared on a diet which proves eminently scorbutic to another infantile member of that family. Even infants at the breast, and newly-born infants too, have developed scurvy, though this is not a common occurrence. Yet fresh breast milk is deemed to be eminently anti-scorbutic and it is certainly free from the ptomaines of decomposition, though in other respects it may be quite unsuitable as a food for the purpose of rearing a healthy child. Undoubtedly many articles of diet which have been administered over long periods of time are capable of producing scurvy in some infants and, equally undoubtedly, they will not do so in the majority of others. Infantile dietetic errors are the rule, but it is only exceptionally that a case of scurvy comes under observation, one unfortunate amongst the many that escape. Thus a diet of sterilised milk, simple boiled milk, pasteurised milk, pasteurised percentage milk mixtures, peptonised milk, condensed milks, malted milks, desiccated milks, the numerous proprietary foods, and cereal gruels combined with the above milk-preparations, each in turn or in combination has produced scurvy in those prone to that disorder though harmless in that respect to others. According to Rosenthal people amongst whom he practises have a method of feeding their children from very early life on *zwieback*—a food similar to toasted sweet bread—nothing else (not even milk) for a time and these children after three or four months of this diet show signs of scurvy.

Further, it has been proved, in a considerable number of cases, that the addition of orange-juice, or fruit-juice, or beef-juice, to some of the above dietaries which have been proved to be scorbutic, has been quite sufficient to cure the complaint. On the other hand, there is the fact that anti-scorbutic articles, in the shape of potatoes and bananas, have been taken, where milk was seldom drunk or meat was eaten, but were not successful in the face of so defective a dietary in warding off the disease. In the case of some infants a mere change of diet, and that not always *prima facie* an ideal one, and without beef-juice or fruit-juice, has proved successful in bringing about a cure. The judicious combination, however, of fruit-juice and a rational dietary must be looked upon as a specific and the rapidity of the cure in such cases is most striking.

Does the view of Torup of Christiania that scurvy is due to ptomaine poisoning from tainted meat, and that the fact that fresh vegetables and lime-juice are a part of the dietary is not sufficient to prevent or to cure scurvy, satisfactorily explain cases of infantile scurvy? It is a view which has much to recommend it, for it has been fortified by Arctic experiences and has, moreover, been confirmed by the experiments of Mr. F. G. Jackson and Dr. Vaughan Harley on monkeys.[1] One's clinical experience of infantile scurvy, combined with a study of the histories of numerous fully reported cases scattered through literature, do not favour the acceptance of Torup's views on adult scurvy in explanation of its etiology.

It would appear that in infantile scurvy we can go no further at present than to say that the fault lies mainly in the diet but not from a ptomaine point of view, and the more the food departs from what is natural and the more prolonged is the use of such a faulty food, the more likely is it to produce scurvy. But for reasons already given there must be a personal factor in these cases. The diet prescribed may not be appropriate for the particular child for whom it has been designed; certain foods are specially obnoxious to certain children and of these harmful foods the proprietary foods hold the pride of place.

Welbeck-street, W.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

HOSPITAL FOR SICK CHILDREN, GREAT ORMOND STREET.

TWO CASES OF ABSCESS IN THE TEMPORO-SPHENOIDAL LOBE PRESENTING NO LESION IN THE EARS.

(Under the case of Dr. D. B. LEES.)

ABSCESS of the temporal lobe of the brain is so commonly consecutive to suppuration in the middle ear, that it is desirable to record instances where no ear lesion is present. In the following cases there was necrosis of a small portion of the petrous bone, but the middle ear appeared to be perfectly healthy. Septic organisms may have been conveyed to the petrous bone and to the brain from a transient

1. THE LANCET, April 26th, 1902, p. 1184.

otitis externa, which is not uncommon in children. Mr. C. Mansell Moullin described a case at a meeting of the Clinical Society of London,[1] in which an abscess was found in the temporal lobe although there was "no sign of middle ear disease."

CASE 1.—A girl, aged six years, was admitted into the Hospital for Sick Children, Great Ormond-street, on Nov. 14th, 1901, under the care of Dr. D. B. Lees. For two months before admission she had suffered from frontal headache and earache and for the last month from vomiting. On admission her attitude was one of cerebral irritation with evidence of marked photophobia. She complained of severe intermittent pain in the right frontal region. No paralysis or rigidity was present but there was optic neuritis on each side, which was more advanced on the right side. Percussion of the head elicited tenderness only over the right side of the forehead. The tympanic membranes were normal and no discharge from the ear was found. The child's condition remained about the same till the morning of Nov. 25th, when she died suddenly.

Necropsy.—At the post-mortem examination an abscess containing about two ounces of greenish inodorous pus was found in the right temporo-sphenoidal lobe, with rough walls of some thickness and consistence. On the dura mater, facing its point of nearest approximation to the surface and overlying the external auditory meatus about half an inch from the tympanum, was a hiatus a quarter of an inch in diameter with discoloured margin, leading to a necrotic depression in the bone. On chiselling away the latter the underlying lining membrane of the meatus was found to be normal. The dura mater over the middle-ear was normal and the cavity of the latter and the mastoid cells contained only a trace of clear mucus, the walls and ossicles showing no change. The organs in other parts were healthy. A pure culture of the streptococcus pyogenes was obtained from the pus.

CASE 2.—A girl, aged one and three-quarter years, was admitted into Dr. Lees's ward on July 16th, 1896. Three months before admission she had suffered from vomiting and "used to put her hand to her head and cry out." For three weeks before admission she had lost the use of her limbs, a condition which was ushered in by a fit. The child was drowsy, with bulging fontanelle, and presented a left-sided hemiplegia. A double internal squint subsequently appeared but no optic neuritis. Death occurred on August 16th.

Necropsy.—The post-mortem examination disclosed an abscess of the size of a hen's egg in the right temporo-sphenoidal lobe with tough walls and containing thick greenish pus. Some amount of basic meningitis was also present. The brain and membranes were adherent to the right great wing of the sphenoid and the right petrous bone showed a small patch of disease of about the size of a three-penny-piece above the tympanum. The middle-ear on this side was healthy and the membrana tympani was clear and thin. Otherwise the body showed no abnormality.

Remarks by Dr. LEES.—In each of these two cases an abscess in the right temporo-sphenoidal lobe apparently resulted from necrosis of a small part of the petrous bone, without any affection of the tympanic cavity or mastoid cells. It is, however, to be regretted that the temporal lobe and petrous bone had not been removed together and placed in formalin before it was attempted to trace the path of the suppurative infection. In the case first narrated the necrosed part of the petrous bone lay over the external auditory meatus and in the earlier case it lay over the tympanum. In both cases the underlying mucous membrane was healthy and it seemed probable that the bone was the primary seat of disease. The cases prove that necrosis of the petrous bone and temporo-sphenoidal abscess may exist when there is no otorrhœa and the tympanic membranes are normal—a fact of great importance in diagnosis.

VICTORIA HOSPITAL, FOLKESTONE.

A CASE OF ACUTE INTESTINAL OBSTRUCTION DUE TO EMBOLISM OF BRANCHES OF THE SUPERIOR MESENTERIC ARTERY.

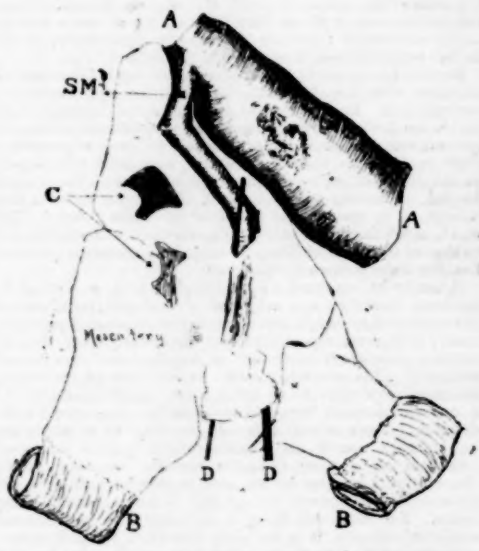
(Under the care of Dr. W. J. TYSON and Mr. W. W. LININGTON.)

EXTENSIVE interference by thrombosis or embolism with the circulation of the bowel leads to symptoms of intestinal obstruction owing to the resulting paralysis of the muscular coat of the gut. The recorded cases are not numerous and the condition has never been diagnosed before operation.

A married woman, aged 66 years, was first seen by Mr. Clifford Hackney on March 5th, 1901. Her symptoms were slight pain over the liver, constipation, sickness, and a little epigastric tenderness; these had been present for two or three days. The temperature was normal. On the 7th she stated that she felt better, the bowels acted two or three times comfortably, there was less flatulence, but she was still sick, the vomit being of a greenish colour, watery, and free from odour. On the next day the sickness became worse and abdominal distension appeared, the bowels were confined, and the general condition was much worse. The notes of the history of the case were kindly supplied by Mr. Clifford Hackney, with whom Dr. Tyson saw the case in consultation at Hythe on the 9th.

The patient was admitted into the Victoria Hospital, Folkestone, on March 9th, and was then constantly sick, the vomit being of a coffee-ground nature. There were abdominal distension and constipation. The chest was normal and the temperature was 99·5° F. It was considered advisable to perform laparotomy and this was done the same evening by Mr. Linington. On opening the abdomen a quantity of turbid sanious fluid escaped. The small bowel was congested and on tracing it down as indicated by the increased depth of colour it was found to be slightly fixed on the right iliac fossa; this was freed and about one foot of gangrenous bowel appeared, greatly thickened, black, lustreless, and in parts sloughy. The attached mesentery was in a similar state. Recognising the condition as one of thrombosis the affected part was excised well clear of the gangrene, 22 inches being removed. Murphy's button was used to unite the ends of the bowel, being augmented by Czerny-Lembert sutures. Considerable difficulty ensued with the mesentery owing to its thickened and rotten state which extended back to its spinal attachment. The dead part was removed and the adjacent edges were made to overlap so as to give greater purchase to the sutures than in an edge-to-edge approximation. The abdomen was flushed out with hot sterile water and was sewn up. The operation lasted just over an hour, being lengthened by the difficulty of dealing with so rotten and swollen a mesentery; it was only with great care that the ligatures could be tightened sufficiently to stop the bleeding without cutting through the part included.

FIG. 1.



Illustrates the post-mortem specimen reduced to nearly one-half its actual size. A, Aorta, showing atheromatous ulcers. SM, Superior mesenteric artery. B, Healthy bowel. C, Clots in veins. DD, Glass rods, passed through obstructed branches of the artery.

[1] Transactions of the Clinical Society of London, vol. xxvii., 1894, p. 124.

The patient was very collapsed after the operation but improved somewhat later and was able to retain half an ounce of peptonised milk. She again became worse and notwithstanding the repeated use of stimulants and saline injection death occurred on the 11th, 36 hours after the operation.

Necropsy.—The post-mortem examination revealed atheromatous erosion in the descending aorta and blocking of branches of the superior mesenteric vessels. The Murphy's button was in good position and was watertight. The mesentery was also well secured. The part of the bowel excised

FIG. 7.

Illustrates the portion removed by operation. Section of mesentery, showing V, clotted vessels. B, Bowel part laid open, showing œdema causing obliteration of lumen.

(22 inches) was from the ileum, one foot from its junction with the cæcum; the greater part of it was gangrenous, the walls being so thickened that the lumen was almost completely obstructed.

Remarks by Dr. TYSON and Mr. LINNINGTON.—Cases of the above character are comparatively rare and as far as the literature is concerned have been more commonly reported abroad than in England. It seems that the general symptoms and signs are almost similar in character, whether the superior or inferior mesenteric artery is involved. Although certain differential points have been given they do not seem to be of much value when practically considered; in both intestinal obstruction is produced and the real cause has rarely been diagnosed or even guessed at before operation or until after death. The first prominent symptom is abdominal pain closely resembling an ordinary attack of colic, nausea is frequent and occurs fairly early, and vomiting follows with gradual change in the character of the vomit. Constipation sometimes occurs but diarrhœa has been commonly reported. Tension and tympanitic swelling of the abdomen are late symptoms indicating the advent of peritonitis. Extreme fœtor of the stools is of serious omen and points to gangrene of the bowel. Profuse intestinal hæmorrhage has been recorded and when meeting with this symptom it is as well to bear in mind that embolism of the mesenteric artery may be the cause.

The prognosis is always grave but not absolutely fatal; of course, this must be better if only one branch is involved rather than several—it is doubtful if recovery has ever taken place when the main vessel has been occluded. The greater the arterial obstruction the more severe are the symptoms. As regards the source of the embolus the left heart seems to be the most common and after this the abdominal aorta, as in the present case. The occurrence of thrombosis from injury has also been placed on record. There have been a few cases of thrombosis of the vein only giving rise to intestinal obstruction although the artery was unaffected—notably Fagge's and Bradford's cases. Where the swelling of the bowel from infarcts has occurred the tumour has been mistaken for one of malignant nature.

As regards treatment early abdominal section gives the only possible chance. We have not been able to find any recorded instance of recovery after delayed operation and it is quite conceivable that if the foregoing case had been operated on a few days earlier the result might have been successful. It is quite evident that kneading the abdomen in such cases must be absolutely wrong and also that opium in other than minute doses would mask and obscure the real cause of the trouble. No doubt there are slight cases in which the patients get quite well without the cause of the illness being recognised, the symptoms being colic and intestinal hæmorrhage. In these the anastomoses of the vessels along the edge of the mesentery are sufficient to re-establish the circulation through the affected area, thus preventing obstruction and subsequent gangrene; in more severe cases these ensue, because the blood-supply from adjacent vessels is not adequate to the larger area involved.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Discussion on Endotheliomata occurring in Various Regions and their Mode of Origin.—Congenital Multiple Sarcoma of the Skin.

A MEETING of the section of Pathological Anatomy and Histology of this society was held on April 29th, Dr. J. F. PAYNE, the chairman of the section, being in the chair.

Mr. RAYMOND JOHNSON and Mr. T. W. P. LAWRENCE commenced the Discussion on the Endotheliomata by a paper (illustrated by lantern slides) on a series of specimens of endotheliomata of the salivary gland. The paper was brought forward as a contribution towards the solution of the question as to whether the so-called "parotid tumour" and others of identical structure were to be regarded as of epithelial or connective-tissue origin. Typical encapsuled parotid tumours and similar growths in the neighbourhood had been examined. In none of the specimens in the museum of University College could they satisfy themselves that there existed any adenomatous structure. From their observations Mr. Johnson and Mr. Lawrence were in agreement with Rudolf Volkmann and other pathologists who regarded the tumours in question as of connective tissue origin—they were, in fact, endotheliomata. No data were obtainable as to whether they arose in the endothelium of blood-vessels or of the lymphatics. The substitution of the connective-tissue for the glandular theory of the nature of the salivary-gland tumours introduced the difficult question of their limited and well-defined distribution. Tumours of the so-called "carotid gland" of identical structure had been met with, and it was suggested that similar vascular formations might occur in other parts of the area of distribution of the carotid vessels from which the tumours in question arose.

Mr. C. G. SELIGMANN read a paper on three cases of Tumour which he regarded as Endotheliomata. Two of these occurred in the soft palate in patients aged 55 and 43 years respectively. In neither of these were there any enlarged glands or other signs of metastasis. The third case was one of abdominal tumour in a woman, aged 31 years.

Dr. H. D. ROLLESTON and Dr. O. F. F. GRÜNBAUM showed Microscopic Sections from Four Tumours (three from the cheek and one from the lip) belonging to the class of endothelioma. One was a typical endothelioma arising from the endothelium lining lymphatic capillaries; the vessels could be seen undergoing dilatation and distension with proliferated endothelial cells. It appeared probable that the dilatation was due to proliferation of the cells in four directions on the same plane. Alveolar spaces resembling gland tubes were formed in two ways—(1) by degeneration of the cells in an originally solid mass of endothelial cells; and (2) by portions of the connective-tissue basis becoming surrounded by cells and then undergoing degeneration. The acid orcein stain showed elastic tissue in some of the alveoli. The second specimen was a perithelioma, derived from proliferation of the endothelial cells of the perivascular space, and it presented an appearance resembling a villous carcinoma. It illustrated the group of tumours called "blastoma" by Powell White, in which the cells, originally all of one type or "indifferent," eventually formed both epithelial and sarcomatous cells; such tumours had been termed "carcino-sarcoma." The third and fourth specimens, from the lip and cheek respectively, very closely resembled the endotheliomata of the parotid and, like them, contained cartilage.

Mr. A. W. NUTHALL and Dr. J. G. EMANUEL (Birmingham) read a paper on, and exhibited specimens from, four cases of New Growth affecting the Alimentary Tract and presenting unusual characters, occurring in patients aged 44, 27, 56, and 38 years respectively. In every case the mucous membrane was intact and the serous coat was unaffected, and Mr. Nuthall and Dr. Emanuel advanced reasons for concluding that the growths had not arisen from the mucosa of the bowel but that they were of an endotheliomatous type.

Mr. E. M. CORNER and Mr. S. G. SCOTT showed sections of, and described, a Tumour of the Lip and another one of the Submaxillary Gland, both of long standing and benign. Both shelled out easily and had a fibrous capsule. The structure of the tumour from the lip, which contained islands of cartilage, was fully described. The submaxillary tumour was similar, only it had little or no cartilage. Mr. Corner and Mr. Scott concluded that these tumours had originated from blood-vessel endothelium from the following facts: the structure of the walls of the canals, their lining cells being continuous with those of the parenchyma, their containing blood, and the absence of ordinary blood-vessels in the tumours.

Mr. S. G. SHATTOCK discussed the nature of a Mixed Tumour of Endotheliomatous Type which had occurred upon the lower lip. It was an encapsulated tumour consisting of cartilage, and blood-channels lined with layers of polymorphous epithelium, in place of marked columnar form. The specimen had long been in the museum of University College and he was able to show it through the kindness of Mr. Lawrence. It belonged to the same group as those of the parotid, submaxillary glands, and palate. The cartilage in these tumours he had once thought might indicate a reversion to a tissue found in the glands of the mouth in lower ancestral forms. For besides the atavism which concerned the grosser forms of organs an atavism of tissue—a teleplasia as it might be called—was theoretically possible. He had found no evidence of this; his examination of the parotid gland of the echidna and ornithorhynchus, the most likely of mammalian forms to exhibit such modified structure, showed a stroma of common connective tissue only supporting the acino-tabular elements of the gland. There was no alternative except to connect the cartilage in this series of tumours with Meckel's cartilage, in the proximity of which they occurred, near its exterior termination. The blood-channels of the tumour, lined in part with columnar cells, offered great difficulties. In no member of the whole animal series were the blood- or lymph-vessels furnished with columnar epithelium. If the endothelium of the heart and great arteries was derived from the hypoblast or endoderm, the peripheral blood-system arose from vasifactive mesoblastic cells. One suggestion the speaker would make was that the channels might arise in connexion with remnants of certain extensions of the primitive cœlom. The pleuro-peritoneal or body cavity or cœlom arose as a direct extension of the primitive alimentary canal—i.e., it was of hypoblastic or endodermal origin. In the dogfish tubular extensions of the cœlom, lined with columnar cells, lay in the substance of the branchial bars, the blood space, lined with flat cells, being alongside; these cœlomic extensions in the dogfish disappeared. Was the system of channels in these tumours related to remnants of cœlomic extensions in the branchial bars, the blood capillaries afterwards coming to communicate with them? or did blood-vessels become invaginated into such a system after the manner described by Professor Ray Lankester as "phlebocedesis," the columnar cells of channels in the tumour being furnished by the endodermal cells answering to a lymphatic sheath? Or was it simpler to assume that the mesoblastic cells which gave rise to the capillaries were of endodermal descent and that in these tumours the columnar form was a reversion indicating their primary source?

Mr. G. E. GASK exhibited sections of a Complex Papillomatous Growth consisting of a delicate fibrous stroma and lined by a layer of flattened cubical cells taken from the synovial sheath of the tibialis anticus tendon, subsequent to an injury to the ankle-joint and probably originating from the endothelial lining of the synovial sheath.

Dr. J. F. PAYNE, in discussing the series of papers which had been brought before the society, thought that the subject was surrounded by a good deal of difficulty. As regards "parotid tumours" he inclined to the view that they originated in some way in embryonal "rests."—Dr. H. MORLEY FLETCHER asked Dr. Rolleston how he accounted for the elastic fibres in the tumour which he had observed, and Dr. ROLLESTON replied that the elastic fibres had remained while the fibrous tissue around them had undergone degeneration.—Dr. ARTHUR WHITFIELD also remarked that this same survival occurred in the lesions of tuberculosis.—Mr. J. H. TARGETT regarded the specimens exhibited by Mr. Nuthall and Dr. Emanuel as examples of schirrhus such as occurred in the stomach. He did not see why these specimens should not be regarded as ordinary carcinomata of the scirrhus type. He had seen a great many tumours of the so-called "parotid" kind occurring in many curious places—the tip of the nose, the lacrymal gland, the palate, parotid gland, and elsewhere—but he had never met with or heard of any occurring away from the face. As regards their origin, he preferred the old-fashioned view—viz., that they were altered gland tissue. At any rate, he felt sure that he could produce sections from them which could not be distinguished from gland tissue.—Mr. J. H. PARSONS, Dr. F. J. POYNTON, and Mr. J. W. T. WALKER also took part in the discussion and Mr. RAYMOND JOHNSON replied.

Mr. GEORGE PERNET read a paper on a case of Congenital Multiple Sarcoma of the Skin occurring in the body of a newly-born female child which was brought to University College Hospital after death. There were 70 growths disseminated over the skin and sections of some of these revealed the structure of round-cell sarcoma.

Mr. W. G. SPENCER exhibited card specimens of (1) Fibromyoma in one Breast and Carcinoma in the other; (2) Hæmorrhagic Cyst of the Pancreas resulting from aseptic hæmorrhagic pancreatitis; and (3) Lymphangioma Hypertrophicum of Congenital Origin.

Mr. W. WATKINS-PITCHFORD (Birmingham) exhibited card specimens of a large Multilocular Cyst of the Pancreas from the body of a woman 29 years of age.

CLINICAL SOCIETY OF LONDON.

Clinical Evening: Exhibition of Cases.

A MEETING of this society was held on April 25th, Mr. HOWARD MARSH, the President, being in the chair.

Mr. H. L. BARNARD exhibited: 1. A case of Left Parietal Meningocele or Cephalhydrocele occurring in a male child, aged two weeks, who was brought to the London Hospital for a swelling on his head. The swelling was noticed two days after birth and had not increased in size. It was situated on the upper and posterior part of the left parietal bone and was distinct from the anterior and posterior fontanelles and the sagittal suture. An attempt to reduce it had led to cessation of respiration and pallor. 2. A case of Multiple Chondromata or Osteomata with Synostosis of the Lower Epiphyses of both Ulnæ and Fibulæ. The tumours projected from the ribs, scapulæ, clavicles, and femora, &c. The epiphyses were for the most part enlarged. The lower epiphysis of the ulna had undergone early synostosis on both sides, leading to ulnar displacement of the hand at the wrist-joint. The fibulæ (the homologous bones in the leg) were in the same condition. The patient suffered from severe rickets when a child. 3. A case of Tumour of the Abdominal Wall.

Mr. HASTINGS GILFORD (Reading) showed a case of Conspicuous Delay of Growth and Development. The patient was an instance of a disorder which had not hitherto been systematically described, though some dozen or more cases had been recorded by French and German writers. He was 28 years of age and came of a healthy family. At 23 years of age he was 1·078 metres (three feet six inches) in height and had since grown 18 millimetres. His height and proportions resembled those of a boy between six and seven years of age. A radiogram of the hand showed that ossification was no farther advanced than was usual at the age of 10 years, while the dentition was like that of a child of the same age. The contour of the body and the appearance of the head and face were childish. The sexual organs were the most backward in development; the testes had not descended and the external genitals were infantile. The intelligence was good, but his behaviour and conversation were more like those of a child than of an adult. The thyroid gland could be felt. The dwarfism in this case was apparently not due to any of the known causes of that condition. Achondroplasia, rickets, and microcephaly could be definitely excluded.

Mr. A. A. BOWLBY exhibited a case of Ethmoidal Mucocele occurring in a man, aged 26 years, a horsekeeper.

When five years old he had suffered from "an abscess in the left eye," presumably from the history referring to a swelling in the orbit above the inner canthus and closely adherent to the inner wall. This condition had lasted for 13 months and was followed by a persistent painless swelling in the region of the upper part of the nose on the left side. On March 10th, 1902, he first noticed that he was unable to breathe through his left nostril and he experienced pain at the inner side of his left eye. Since then the swelling had increased, become more tender, and was accompanied by greater pain. He had never had headache, vomiting, or diplopia. Mr. Bowlby explained that the inferior and middle turbinate bones had been removed. The patient's temperature had been elevated and he had had severe attacks of pain. The vision was perfectly normal, although the eyeball was so displaced. It might be necessary to remove the ethmoid.—Dr. HERBERT TILLEY thought that in view of the difficulties connected with the rapid healing of the wound caused by an external operation it would be advisable to operate through the nose by means of sharp spoons; if due caution were used there should be no danger of encroaching upon the cribriform plate. Failing relief by this means he would suggest that the ethmoid should be attached by way of a large opening in the anterior wall of the corresponding antrum. By this route the lateral masses of the ethmoid could be reached and easily dealt with.

Dr. W. ESSEX WYNTER exhibited a case of Congenital Absence of the Nose and Anterior Nares, with Deficiency of the Hard and Soft Palate. The patient, a female, six weeks old, the first child of healthy parents, showed this very unusual deformity without "hare-lip" or deficiency of the premaxilla. The child suffered from difficulty in feeding and respiration. —The PRESIDENT remarked that the case was exceedingly rare. He did not know of any recorded cases.—Dr. TILLEY said that on closely examining the case it would be found that the hard palate was not cleft but that its central portion for about one inch in the antero-posterior direction and half an inch transversely was abruptly drawn upwards into a smooth concavity. No intra-nasal structures were visible through the mouth and the soft palate was quite a normal one and continuous with the concavity afore-mentioned.

Sir HUGH BEEVOR exhibited a case of Probable Congenital Atelectasis occurring in a single woman, aged 22 years. She had no symptoms. The heart was on the right side; the apex was in the third interspace in the axilla. The lung appeared to have the upper lobe almost solid, but the bronchi were not patent, the breath-sounds being almost absent. There was no history of previous illness. A high and narrow palate, a double coloboma of the iris, and developmental changes visible in the lens and retinæ, suggested that the case might be one of congenital atelectasis of the lung or apneumatosis.—Dr. PERCY KIDD concurred in the diagnosis of collapse of one lobe. He had met with such a case in the post-mortem room. He agreed that this case was one of congenital absence of development of the right upper lobe.—Sir H. BEEVOR, in reply, said that he had not been able to meet with any precedent until that mentioned by Dr. Kidd, but he had met with early obliteration of the upper lobe.

Mr. W. G. SPENCER exhibited a case in which Excision of the Right Wrist by a Posterior Median Incision for Tuberculous Disease had been done three years previously. In March, 1900, some sinuses in the right forearm had been scraped and arthrectomy of the left knee performed. Since that time the patient had remained in good health.

Dr. J. WALTER CARR exhibited a case of Congenital Morbus Cordis with Extreme Clubbing of the Fingers and Toes occurring in a female, aged 10 years. The child had always suffered from cyanosis and much dyspnœa on exertion. She was fairly well developed and well nourished but showed a high degree of cyanosis. Clubbing of the finger-ends was marked. The heart was enlarged transversely, mainly to the right, but the exact nature of the lesion was obscure, as the only murmur heard was a very faint systolic one over the left border of the sternum, most distinct at the inner end of the second and third spaces. There was marked concentration of the blood, showing 8,000,000 corpuscles per cubic millimetre and 20 per cent. of hæmoglobin.—Dr. C. H. FENNELL referred to a similar case occurring in a child, aged eight years, who died from hæmoptysis. It resembled the case exhibited in the almost complete absence of murmur.—Dr. H. A. CALEY regarded the case as one of deficient interventricular septum, associated probably with pulmonary stenosis.

Dr. PERCY KIDD exhibited a case of Arthropathy occurring in a case of bronchiectasis. The patient was a man, aged 30 years, a compositor, with enlargement of both hands (including wrist-joints and fingers), ankles, and to a less extent the knees. The fingers and toes were clubbed. The physical signs in the chest resembled those of tuberculosis of the right upper and lower lobes, but no tubercle bacilli could be found in the sputum. The paroxysmal character of the cough and profuse expectoration suggested bronchiectasis. The sputum was not offensive. The patient had suffered from gout several times during the past six years and had had chronic cough with expectoration for three years.

Mr. A. BEVAN (introduced by Dr. ARCHIBALD GARROD) exhibited a case of Urticaria Pigmentosa occurring in a child, five years old. The spots had appeared first upon the legs when she was only two or three months old, at first pink in colour, then gradually turning brown.

Dr. STCLAIR THOMSON exhibited a case of Chancriform Ulcer of the Tonsil or "Vincent's Angina." The patient, a boy, aged 12 years, had only been complaining of a little sore-throat for four days. The right tonsil was seen to be occupied by an oblong greyish slough made up of a pulpy or chalky membrane which was easily detached. The case was shown as illustrating an uncommon form of membranous ulceration of the tonsil which had been described on the continent under various names, such as "diphtheroid angina," "membranous amygdalitis," and "ulcerating lacunar tonsillitis." The name "angina of Vincent" was given to it in consequence of the discovery by Vincent in the membrane of a spindle-shaped bacillus of 4 μ in length and 1 μ in width. He had previously discovered the same bacillus in the dirt of hospitals.[1]—Dr. HERBERT TILLEY suggested that a careful examination be made of the organisms associated with the ulcer, for in a genuine case of "ulcerative tonsillitis" their form and arrangement were very characteristic. The affection was usually found in anæmic females.

HARVEIAN SOCIETY OF LONDON.

Exhibition of Cases.—Tuberculous Disease of the Knee-joint.—Idiopathic Hereditary and Family Hæmaturia.

A CLINICAL meeting of this society was held on April 24th, Mr. W. WATSON CHEYNE, the President, being in the chair.

Dr. T. D. SAVILL showed a woman, aged 39 years, who was the subject of Erythromelalgia or Sclerodactylia. She had had a general eczema of the hands which started 15 months ago. The skin was now cured of any eczematous element, but there was left a sclerotic condition which for some months had prevented proper movement of the fingers. The redness was almost limited to the digits. All her other skin was healthy. There was a history of numb dead hands, much the same as in cases of Raynaud's disease. She could not resume her occupation because she was unable to close her hands. The fingers were tapered in the way usually observed in circulatory disorders.—Dr. LEONARD G. GUTHRIE and Mr. F. JAFFREY took part in the discussion.

Dr. ALEXANDER MORISON showed an infant, seven months old, who exhibited a great Enlargement of Veins passing from the vertex of the head to the left ear. When the child was quiet a venous pulsation could be detected. There was some tension of the fontanelle. Nothing wrong was noticed until the child was three months old. It was the third child of the family, the first having aborted at five months and the second child was now four years of age. A French physician had published a description of the condition, recounting 50 cases, and he stated that there was a specific history in all the cases. The French author thought that such children eventually got well. Dr. Morison thought that the specific character of the condition was not made out. The present patient had been treated for syphilis and for rickets.—Dr. E. CAUTLEY had seen cases without such history where there was marked obstruction to the circulation. In one case of great obstruction the child developed hydrocephalus and the obstruction was found to be due to a tumour. Assuming the syphilitic causation of the disease, what was the lesion which would produce such a dystrophy? The unilateral condition sometimes met with might be due to the fact that the

[1] Vincent: Annales de l'Institut Pasteur, 1895, p. 488.

communications between veins were more free on one side of the head than on the other.—Dr. MORISON replied.

The PRESIDENT showed a man, aged 40 years, on whom Epididymectomy was performed 11 years ago for Tuberculous Disease on the right side. Two and a half years ago he came under treatment for tuberculous disease of the left testicle. He (the President) excised the epididymis and vas deferens, leaving the body of the testicle, with the vessels going to and from, intact. The result was that the body of the testicle remained well nouri-hed and on superficial examination there was not much missing apparently. The operation was done by clean cutting, not by scraping. Great care had to be taken not to injure the vessels supplying the testicle with blood in removing the globus major. The President dealt with the mental aspect of such operations and the importance of leaving the testicle if possible.—Mr. RAYMOND JOHNSON took part in the discussion and the PRESIDENT replied.

Dr. J. S. RISIEN RUSSELL showed and demonstrated a case of Idiopathic Muscular Atrophy. The patient was a man, aged 45 years. The disability had come on three years ago, up to which time he had followed a laborious occupation. 16 months ago his left arm began to give out. The face also was affected, chiefly in the orbicularis palpebrarum and the orbicularis oris. He was an only child and no other member of his family seemed to have been similarly affected.—Dr. CAUTLEY and Dr. G. A. SUTHERLAND took part in the discussion and Dr. RUSSELL replied.

Mr. J. STANSFIELD COLLIER showed a youth, aged 17 years, who five years ago was very severely burnt on both feet and legs, leaving a patch over the front of the left tibia which never healed, the ulcer having broken down several times. He performed the Tagliacotian operation, examples of which were seldom seen now. There were advantages in that operation when dealing with an ulcer the bottom of which was bone thinly covered with very dense scar. He took the flap from the upper part of the right leg and left the flap attached to both limbs for a fortnight. The raw surface caused by the removal of the flap had been covered with Thiersch's graft and had nearly healed.

Mr. RAYMOND JOHNSON read a short paper on Some Points in the Treatment of Tuberculous Disease of the Knee-joint. Doubt was expressed as to whether tuberculous disease of a joint was ever recovered from with any degree of fibrous ankylosis. It was pointed out that a considerable proportion of the cases of supposed tuberculous disease of joints followed by perfect restoration of movement occurred in the hip in which the distinction between early tuberculous disease and other affections was particularly difficult. In the knee the results of non-operative treatment were usually unsatisfactory, for a degree of mobility was often left which was detrimental rather than useful, in that some degree of flexion of the joint so frequently followed. Such a condition often called for operative interference with the object of converting the partial into a complete ankylosis. For similar reasons the operation of arthrectomy or simple erasion was often unsatisfactory and it was advised that even though the articular surfaces were healthy these should be removed in order to obtain with greater certainty firm ankylosis. After all operations a long period of fixation was necessary.—The PRESIDENT and Mr. COLLIER discussed the paper and Mr. JOHNSON replied.

Dr. L. GUTHRIE read a paper on "Idiopathic," or Congenital, Hereditary and Family Hæmaturia which is published at p. 1243 of our present issue.—Dr. J. ATTLEE mentioned a case under his care in which the blood was bright-red. Sometimes it cleared up altogether. In one case between the attacks there was albumin in the urine but no blood.—Dr. SUTHERLAND inclined to the view that the cause of the condition was some vaso-motor change. In some respects the similarity of such cases to cyclic albuminuria was very marked. Perhaps the lesion was a renal one, purely localised. He asked whether the patients had had hæmorrhage from any other organ and whether in any cases there had been a development of Bright's disease.—The PRESIDENT asked whether there were any nævi found in the body.—Dr. CAUTLEY asked whether there was any history of rheumatism in such cases.—Dr. GUTHRIE, in reply, said that none of the patients whose cases he had narrated had nævi in the body. The blood did not come from the bladder because it contained renal casts. His own view was that the case was vaso-motor. There had been no hæmorrhage elsewhere in his cases. One girl had epistaxis and hæmatemesis but she had no hæmaturia. Another who had hæmaturia suffered from asthma and from eczema, which suggested that the cause was some vaso-motor disturbance. The varying lengths of life of the patients made the prognosis difficult. With regard to rheumatism, he had never yet met a family in which there was not such a history or one of gout.

LIVERPOOL MEDICAL INSTITUTION.

Exhibition of Specimens and Cases.—Tenotomy of the Tendo Achillis in Complicated Fractures of the Lower Extremity.—Operations for Hernia.

A MEETING of this institution was held on April 24th, Mr. RUSHTON PARKER, the President, being in the chair.

Sir WILLIAM BANKS showed a collection of Loose Cartilaginous Bodies removed from the knee-joint of a woman, aged 26 years. They were over 40 in number and varied from the size of a bean to that of small shot. There was a history of two falls upon the knee, the first eight and the second four years previously. After the latter there were always weakness and pain in the joint and recently, when walking, the patient had been seized with sudden and violent pain while she was compelled to clutch any support at hand to prevent falling. The knee was then semiflexed. Several loose bodies could be felt in the articulation which contained a good deal of fluid and was painful and useless. A semilunar incision was made above the knee and the flap, including the patella, was thrown down. The whole joint thus thoroughly displayed was cleared partly by forceps and partly by means of a strong stream of water, which flushed every pocket in it. The quadriceps tendon and muscles were brought together by deep sutures and perfect primary union was obtained. The patient, who had only left hospital three weeks previously, had perfect movement of the joint.

Sir WILLIAM BANKS also showed one-half of an Enlarged Parenchymatous Thyroid Gland which had been removed from a girl, aged 18 years, with whose respiration it had begun to interfere. At the removal it was found that the trachea was flattened from side to side. The patient was shown with the view of illustrating the effect of removal of one-half of an enlarged gland upon the remaining half—viz., atrophy. He advocated clearing the isthmus first of all, ligature thereof, followed by division, and then removal of the half gland by dissection from the middle line outwards. He considered this an infinitely safer and easier method of procedure than beginning to remove the gland from the outer margin.

Sir WILLIAM BANKS also showed a number of Crushed Stones and a large Adenoma of the Prostate, removed from a man, aged 76 years, with an enormously enlarged prostate who had not passed any urine for 15 years except through a small catheter. The operation consisted of a median cystotomy with crushing of some half a dozen stones. He believed that this form of lithotrity through a median perineal incision would be the future operation for lithotomy in old men.

Dr. FRANK H. BARENDT showed two cases of Prurigo.

Mr. W. THELWALL THOMAS read a note on the Value of Tenotomy of the Tendo Achillis in Complicated Fractures of the Lower Extremity. He had practised it with conspicuous success in fractures above the condyles of the femur, oblique fractures of the tibia, and in fractures of the tibia and fibula immediately above the ankle-joint. Fractures that united with any degree of deformity distorted the line of weight-bearing in the limb and altered the relative position of the joints to this axis, and until met by a new development of bony trabeculæ the limb was very much disabled. He considered it essential that every fracture should be accurately reduced soon after the injury and that less trust should be placed in pads for pressing fragments into position during consolidation. Tenotomy enabled this to be carried out readily in the above-mentioned fractures, where extreme flexion would otherwise be necessary, and the need for more serious operations would become less frequent and tedious convalescence materially diminished. The use of x rays would help to verify the position if any doubt existed.—The PRESIDENT said that it was evident that tenotomy of the tendo Achillis must be good sometimes under certain conditions of manipulation and manipulative skill, but that the necessary relaxation of the calf muscles in cases where the first adjustment was difficult could generally be affected by

bending the limb freely at the seat of fracture and so without much force permitting the broken fragments to be put easily into apposition. Linear traction in such cases, if employed before adjustment, necessarily failed by locking the fragments in a bad position.—Mr. R. W. MURRAY said that under ordinary treatment an oblique fracture of the lower end of the tibia reduced a labourer's wage-earning capacity by at least 50 per cent. There was extreme difficulty not only in reducing the fracture but also in maintaining correct apposition, even when the site of fracture was exposed by a free incision under an anæsthetic. On these grounds he strongly advocated wiring or screwing in these fractures, whether simple or compound.—Sir WILLIAM BANKS and Mr. F. T. PAUL also spoke and Mr. THOMAS replied.

Mr. G. P. NEWBOLT read a paper based upon 120 Consecutive Operations for Hernia, Radical and Strangulated. There were 77 operations for radical cure and 43 for strangulation, in most of which a radical operation was also performed. The radical operations consisted of 70 inguinal, two femoral, three umbilical, and two ventral, and there was one death from simple pneumonia in a child aged 19 months. Of the 43 cases of strangulation 28 were inguinal, 11 were femoral, and four were umbilical; 10 of these died—i.e., six inguinal, two femoral, and two umbilical. Altogether, 114 patients were operated upon, 97 operations being done on males and 23 on females. Out of 13 cases of femoral hernia only one occurred in a male, and out of 98 inguinal hernia only five occurred in females and two were strangulated. The youngest patient operated upon was two months, and the oldest was 78 years, old. There were two cases of strangulation in young children. The subject of radical operation in children was dealt with and advised in those cases in which treatment by trusses was not likely to be properly carried out. The difficulty in separating the sac from the cord in small babies was commented upon. In large hernias in elderly men the operation of removal of testis and cord with entire closure of the canal and ring was recommended. Mr. Newbolt usually performed Macewen's operation, using silk or kangaroo tendon for ligatures. The question of the taxis was dealt with as were also some points in connexion with reduction in mass. Trusses were generally advised after operation, except in congenital cases. Two cases of inflammatory trouble after the removal of big masses of omentum were narrated, both terminating favourably. In four cases of strangulation out of 43 the intestine was resected and there were three recoveries. Murphy's button was used in each instance and the operation was done through the herniotomy wound. Eucaine was of service in one case in which the patient was so ill that a general anæsthetic was thought to be inadvisable. The deep epigastric artery was divided accidentally in one instance and secured after some trouble. The vermiform appendix was found strangulated in the hernial sac in a case of femoral hernia and was removed. Eight out of the 10 deaths occurred in cases which had been strangulated over 72 hours and they were chiefly due to enteritis and peritonitis. The dark colour of the urine due to the presence of indican was alluded to in cases of strangulated bowel.—After complimenting Mr. Newbolt on his paper the PRESIDENT said that after performing the operation nearly 600 times he found herniotomy a subject full of practical interest and often of novelty. In children irrespectively of station he was in favour of early operation for radical cure. The more he performed it the more he was satisfied that it was both effectual and right, and his later experience simply confirmed his views expressed in 1893 and 1895. Macewen's operation was absolutely satisfactory in almost all cases in children. In the matter of gangrenous gut no fixed rule of procedure could be claimed as preferable; successes and failures had resulted severally from all. The cases must be dealt with, as in many surgical emergencies, according to the circumstances as ascertained at the time.—Mr. K. W. MONSARRAT considered that much of the ingenuity devoted to the invention of new methods of treatment of the hernial sac in radical cure was wasted. The interposition of a muscular barrier was the essential factor. This principle was acted upon in the prevention of hernia through the abdominal wall, it was applied in its simplest form to the cure of umbilical rupture, and was made available in inguinal hernias by Bassini's operation.—Mr. D. DOUGLAS-CRAWFORD advocated radical cure in children of the hospital class. He practised a modified Macewen's operation, but he was satisfied with his results with Bassini's operation. With gangrene of the gut he preferred the establishment of an artificial anus and subsequent repair.—Mr. PAUL, Mr. G. G. HAMILTON, and Mr. DAMER HARRISSON also spoke, and Mr. NEWBOLT replied.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

Exhibition of Specimens.—Cancer of the Cervix.—Double Solid Ovarian Tumours.—Uræmia after Ovariotomy.

A MEETING of this society was held at Manchester on April 18th, Dr. S. BUCKLEY, the President, being in the chair.

Dr. W. WALTER (Manchester) showed a specimen of Adenoma of the Uterus treated by vaginal hysterectomy. There had been almost continuous uterine hæmorrhage for three months in a single patient, aged 39 years. Curetting had failed to arrest it. Dr. Walter performed anterior colpotomy and incised the front wall of the uterus sufficiently to explore the condition of the endometrium. Finding a villous growth attached to the fundus the uterus was removed. The after-history was uneventful. Histologically the growth proved to be an adenoma.

Dr. ARCHIBALD DONALD (Manchester) showed a Uterus which had been extirpated per vaginam from a widow, aged 47 years, for recurrent polypi. There had been metrorrhagia. Numerous polypi were found originating from the cervical wall. They were freely removed by scissors and scraping. Four months afterwards the polypi had returned. Owing to the rapid recurrence the case was looked upon as clinically malignant and hysterectomy was therefore performed. The patient made a good recovery. On microscopical examination of the growths in no part was there any appearance suggesting malignancy. The uterine wall was not involved in the growth.

Mr. E. O. CROFT (Leeds) showed a Placenta Duplex from a Single Gestation. The specimen was obtained from a case of albuminuria and eclampsia at full term. The placental tissue was divided into two equal portions united by a thin membranous band about two inches wide. The cord entered the centre of this membrane and its vessels then spread out in two groups to the placental portions. The fœtus was still-born and ill-developed.

Dr. W. J. SINCLAIR (Manchester) described a case in which he had extirpated the uterus for Cancer of the Cervix by the para-vaginal (Schuchardt's) operation. The patient was a married woman, aged 46 years. The disease was somewhat advanced and was on the boundary line between radical and palliative treatment. There was some induration of the parametrium on the left side. The bladder was free and could be separated. By the method adopted a ready access to the disease was obtained by widely opening up the ischio-rectal fossa and so reaching the parametric tissues. Dr. Sinclair was able to see the left ureter and could remove some growth which was beneath but did not surround the ureter. The ovaries and tubes were removed with the uterus. A few stitches were placed in the peritoneal flaps to prevent prolapse of the bowel and the vagina was loosely packed. Dr. Sinclair thought that a tight packing of the vagina in vaginal hysterectomy was harmful and sometimes determined a sloughing perforation of the bladder.—The case was discussed by Mr. H. BRIGGS, Dr. T. B. GRIMSDALE, and Mr. E. STANMORE BISHOP and Dr. SINCLAIR replied.

Dr. J. E. GEMMELL (Liverpool) related two cases of Double Solid Ovarian Tumours. 1. A multipara, aged 45 years, was said to have had an ovarian tumour seven years previously, but it was not treated. For 12 months she had severe abdominal pain, much gastric disturbance, and floodings. There was much ascites; the liver was enlarged. An irregular solid mass was felt in the lower abdomen. A fibroid nodule was also felt in the posterior uterine wall. Owing to a history of excessive indulgence in spirits and to the condition of the liver the ascites was thought possibly to be due to cirrhosis, but the long existence of an ovarian tumour also suggested the possibility of fibroma or malignant tumour of the ovary. The presence of the fibroid nodule and the metrorrhagia caused further difficulty in diagnosis. The gastric trouble was relieved and the abdomen was opened. Much blood-stained fluid escaped and two ovarian tumours were removed; the small uterine fibroid was also enucleated. The ovarian tumours were mainly solid but they

contained some cystic portions. The growths were carcinomatous. Malignant deposits were seen on the intestines, the omentum, and the liver. The patient was much relieved of her symptoms but she died about three months later. 2. A married woman suffered from pelvic pain and much dyspepsia which did not yield to medical treatment. The menses had become more profuse and frequent recently. A solid ovarian tumour was diagnosed. On opening the abdomen some clear ascitic fluid escaped and a large solid ovarian tumour was removed from the right side and a smaller growth of similar nature from the left side. The larger growth presented a cyst of about the size of an orange at one part. The microscopical sections which were also exhibited showed the growths to be true fibroma.—Dr. WALTER and Mr. STANMORE BISHOP discussed the cases and Dr. GEMMELL replied.

Dr. J. LLOYD ROBERTS described a case of death from Uræmia after Ovariotomy. A patient, aged 58 years, a multipara, was found to have a large ovarian tumour extending to about three inches above the umbilicus. There was a considerable cloud of albumin in the urine. The patient was kept under treatment by diet and medicine until the urine contained a mere trace of albumin. Abdominal section was performed and an ordinary multilocular ovarian tumour on the left side was removed. After operation the quantity of urine decreased and the albumin increased again. The patient became restless and sleepless and vomited frequently. Death from uræmic coma took place on the tenth day, only eight ounces of urine loaded with albumin having been passed during the last 48 hours of life. There were no signs of septicæmia or of peritonitis. Post mortem there was double nephritis, the other organs being healthy. The case demonstrated the gravity of the risk in performing major operations in cases of renal degeneration.—The case was discussed by Dr. DONALD and Dr. SINCLAIR and Dr. LLOYD ROBERTS replied.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

Gastric Ulcer.

A MEETING of this section was held on April 11th, Sir CHRISTOPHER NIXON, the President, being in the chair.

Mr. R. F. TOBIN read a paper on Some Medical Aspects of Four Consecutive Cases of Perforated Gastric Ulcer successfully operated on in St. Vincent's Hospital, Dublin. Three of the patients were young domestic servants. In all the cases the position of the ulcer was the same—namely, an inch or two in front of the œsophageal opening. This, he said, was the most common site for perforation. He believed that perforation was the penalty which the overworked anæmic class that furnished most cases paid for being obliged to carry themselves upright from early rising to late bed-time. The liver in such patients was not braced up owing to the laxity of their tissues and to their being on their legs all day long. The stomach, owing to its fixity to the diaphragm, was being continually drawn through a long range of movement in the breathing that was induced by journeys up and down stairs. Now, given congestion of the area under consideration, that which extended from the œsophagus under the liver, it was easy to understand how the pressure and movement referred to would in anæmic subjects cause congestion to pass to ulceration and ulceration to sloughing; also, how rest in the recumbent position was such a healing force in such cases. He referred to the disastrous effects of movement in cases of perforation and laid down the rule that the surgeon should be called to the patient and that no patient should be moved till the opening had been closed. The convenience of operating in hospital did not cover the loss from transportation. He narrated a case on which he operated successfully with the rudest appliances. Shock should not prevent the immediate performance of an operation. It was not mere nervous shock where nothing harmful was going on while the surgeon was waiting for the patient to come round, but, on the contrary, changes were going on that might lead to thrombosis of the mesenteric veins and render operation useless. As regards prevention, he pointed out that sufferers of the servant class were constantly advised to rest in the intervals at work, although in most houses, short of rest in bed, there were no means of enabling them properly to carry out the suggestion offered.

Dr. REDMOND thought that the great difficulty in such cases was the diagnosis of perforation; there might be little or no shock. In one of his cases he found the patient sitting in bed leaning forward supported by two friends and crying out with pain. She had been in excellent health all day and had eaten heartily of mutton at dinner. There was no diminution of the area of liver dulness. He recommended operation; a perforation at the cardiac extremity of the stomach was found and sutured and the patient made a good recovery.

Dr. J. M. FINNY looked on the diagnosis of the perforation as the real difficulty in these cases. One of his patients who had all the typical symptoms of perforation—vomiting, tympany, pain, and so forth—was operated on three hours after the onset of the attack and all the viscera were found to be healthy; there was no ulcer whatever. The abdomen was stitched up and the patient made a good recovery. He had seen a good many operations for perforating ulcer of the stomach and he could not agree that it was so easy a performance as some thought, particularly if the perforation occurred on the posterior wall; such an operation could not be successfully carried out with lamp or candle light. Absence of liver dulness was not an essential symptom in the early stage of the disease.

Dr. J. F. O'CARROL expressed the opinion that the sooner the operation was performed after the perforation the better. Some few cases might recover under medical treatment, but he thought that the safer practice was operation. The onset of shock was the call for laparotomy; interference should never be postponed on account of shock.

Mr. H. G. CROLY, Mr. D. KENNEDY, Dr. JAMES LITTLE, and others also discussed the paper.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.—A meeting of this society was held on April 18th, Dr. Leonard Guthrie being in the chair.—Dr. D. Mackenzie showed a case of Cystic Hygroma of the Neck undergoing spontaneous cure in a child, aged 11 months. It was of the size of a small orange at birth but had become so small as to be scarcely perceptible.—Mr. R. H. A. Whitelocke (Oxford) remarked that Mr. Bland-Sutton had said that these tumours generally disappeared after puberty, but he had seen a case as late as the age of 27 years.—Dr. Edmund Cautley showed a case of the Peroneal Type of Muscular Atrophy in a girl, aged seven years. She was the third of five living children. There was no history of similar atrophy of muscles or of nervous disorders in the family except epilepsy in a brother and a sister of the mother. The child showed a "claw-like" deformity of the hand due to paralysis and atrophy of all the intrinsic muscles and "club foot" due to atrophy of the corresponding muscles of the foot and of the peronei and extensors of the toes. The other muscles below the knees, the vasti interni, and to a less extent the hamstrings, tensor vagina femoris, and glutei were also involved. The affection began in early life and was perhaps secondary to measles at the age of six months.—Dr. Guthrie, Dr. Fletcher Beach, Mr. H. J. Curtis, Dr. Dawson Williams, and Dr. G. A. Sutherland discussed the paper.—Mr. Sydney Stephenson showed a child, aged eight years, who presented Tuberculosis of the Choroid in the Right Eye and slight signs of phthisis at the apex of the left lung. He knew a case of tubercle of the choroid which had apparently dated back for 30 years.—Dr. Guthrie, Dr. George Carpenter, and Mr. Curtis took part in the discussion.—Dr. J. W. Thomson Walker showed a Tuberculous Nodule of the size of a walnut arising from the dura mater and embedded in the upper and inner part of the left cerebellar hemisphere. Death was due to meningitis, cultures from which showed staphylococci.—Dr. Walker also showed a Primary Osteoma of the Floor of the Third Ventricle with the Formation of a Cyst at one part. The symptoms were those of left cerebellar disease and an exploratory operation had been performed. Only 11 other examples of the tumour were found in literature.—Dr. Guthrie remarked upon the misleading symptoms which had shown themselves in the second case. The girl had right-sided headache and kept her head turned to the right side. Double optic neuritis, slight right facial paralysis, and tremors of the right arm were present, and the right knee-jerk was exaggerated. When placed upon her feet she reeled towards the right. The right side of the cerebellum was, however, found to be quite healthy.—Dr. Sutherland, Mr. Edmunds, Dr. Theodore Fisher

(Bristol), and Dr. Burgess discussed the cases.—Mr. Whitelocke read notes of the case of a girl, aged four years, who was admitted to the Radcliffe Infirmary, Oxford, for supposed Strangulated Left Inguinal Hernia. A reducible hernia was also present on the right side. Double herniotomy was performed and from the left side a body was removed which bore some resemblance to an ovary. A similar body was present on the right side, but it was returned to the abdomen. On microscopic examination the body removed proved to be a testis. Photographs of the external genitalia were shown illustrating the fact that to all appearances they were those of a normal female child.—Dr. Sutherland remarked upon the difficulty of deciding as to the way in which the child should be brought up, whether as a boy or as a girl.—Dr. Guthrie agreed with Dr. Sutherland that she should be brought up as a girl. —Mr. Whitelocke, in reply, said the question of sex was a difficult one. He had heard of a case where a hermaphrodite, if considered a male, was entitled to considerable property.—Dr. C. O. Hawthorne and Mr. Curtis read a paper on a case of Transperitoneal Nephrectomy for Small Round-celled Sarcoma, the patient being a boy, aged four years. The tumour removed weighed three pounds 15 ounces. It appeared to have commenced on the hilum of the left kidney. The wound healed and the stitches were removed. Death, however, occurred on the fifteenth day after the operation from extensive bilateral pleurisy with effusion. No secondary growths could be discovered at the necropsy and no trace of peritonitis or of suppuration elsewhere. The need for early diagnosis and immediate operation in carefully selected cases was emphasised and successful results were quoted.—Dr. D. N. Nabarro, Dr. J. Porter Parkinson, and Dr. Fisher discussed the case.—Dr. Carpenter read notes of a case of Malignant Endocarditis in a boy, aged eight years. Intense optic papillitis supervened associated with simulated choroidal tubercle and sub-retinal hæmorrhages. Just before death embolism of the right common iliac artery occurred.

HUNTERIAN SOCIETY.—A clinical meeting of this society was held on April 9th, Dr. A. L. Galabin, the President, being in the chair.—Dr. F. J. Smith showed a case of Lymphadenoma in a girl, aged eight years, who was admitted to the London Hospital in February, 1902, under the care of Dr. A. E. Sansom. She had had whooping-cough, chicken-pox, and measles, the last named at the age of four years, and it was subsequently to this illness that a lump was noticed in the left side of the neck which had increased in size in an irregular manner. She was a fairly healthy-looking child, apparently enjoying pretty good general health except for some shortness of breath and cough on exertion. Examination of her blood showed 4,000,000 red corpuscles and 4000 white corpuscles per cubic millimetre. Her digestive system seemed to be quite healthy but the spleen was easily to be felt extending some three inches or so below the costal margin. Some slight irregularity was occasionally present in the heart's rhythm and a hæmic bruit was to be heard when she lay down; the frequency of the pulse was also above the average, varying between 100 and 120 per minute. There was increased resistance on percussion over the upper part of the left chest, but air entered both lungs freely and without any adventitious sounds. The urinary and nervous systems were without obvious abnormality. Her temperature occasionally rose to 100°F. but was usually normal or slightly subnormal. A swelling of about the size of a man's closed fist was visible in the left side of her neck, with slight thickening of the tissues of the upper arm and pectoral region, though there was no pitting on pressure. To the hand the lump evidently consisted of enlarged cervical glands; the skin was freely moveable over them and they were freely moveable amongst the deep connective tissue. The individual glands were easily to be felt without any matting together of glands and connective tissue. No other glands were enlarged. The patient had been treated during her stay in hospital with arsenic in increasing doses up to six minims of Fowler's solution per diem and with extract of malt, and under this she had gained in weight 10 pounds in six weeks. Dr. Smith preferred to give a preliminary diagnosis of enlargement of lymphatic glands simply. Tubercle, he thought, could be eliminated by the absence of adhesions of the glands to one another or to the skin after a duration of four years. The duration of the case excluded any process that might be called sarcomatous and he was driven to conclude that the patient was the victim of a disease which would ultimately destroy life unless arsenic were able to hold it in check. He thought that one or other of the glands might be removed with a view to making the diagnosis more certain, as it was possibly a case of splenic anæmia in a child with some tuberculous glands.—Dr. Smith also showed a case of Hemiplegia in a boy, aged nine years. About six or seven months ago, when he was over eight years old, he began to lose power in the right arm and leg. There was now great weakness of all the muscles of the right hand and arm to the shoulder, also of the right leg to the thigh, accompanied by complete freedom of movement on the left side. The perception of general sensation and its localisation were fairly good over the affected areas (quite good over the non-affected ones) but he had very defective judgment between heat and cold all down the right side, the arm, the trunk, and the leg. The patellar reflex on both sides was above the average, but on the right side it was very exaggerated and was accompanied by ankle clonus; on tickling the soles the right big toe was bent up (pathological) while the left one was bent down (normal). The cranial nerves seemed to be quite healthy. Intelligence was unimpaired and the patient had no peculiarities of speech and no headaches. Dr. Smith's diagnosis was degeneration of nerve fibres; the evidence, especially the spasticity, was on the whole in favour of a cortical lesion.—Dr. W. H. Kelson showed a case of Enlargement of the Right and Middle Lobes of the Thyroid Body of six years' duration in a woman, aged 33 years. Slight tremor and palpitation were present and she suffered from menstrual irregularity and breathlessness. Dr. Kelson took the view that the symptoms were due to some abnormality in the thyroid secretion and that in very varying degree such symptoms were always present in all thyroid enlargements, the culminating point being a typical case of exophthalmic goitre, although microscopically the appearances differed considerably.—Sir Hugh R. Beevor showed a case of Factitious Urticaria.—Dr. David Ross showed a case of Tetany in a labourer.—Dr. Kelson, Dr. T. Glover Lyon, Dr. Milligan, Sir Hugh Beevor, Mr. J. H. Targett, and the President discussed the cases.

CHELSEA CLINICAL SOCIETY.—A meeting of this society was held on April 15th, Dr. C. A. Morris, C.V.O., the President, being in the chair.—Dr. C. C. Gibbes showed a case of Patency of the Ductus Arteriosus occurring in a man, 27 years of age, pale in complexion, stunted in growth, and badly developed. Dyspnœa, œdema, cyanosis, and clubbing of the finger-tips were entirely absent. The heart was normal in size. A systolic murmur could be heard over the right carotid artery and in the aortic area but there was no diastolic murmur. A continuous harsh murmur, commencing about the middle of the systole, running through the second sound, and occupying about two-thirds of the diastole could be heard over the whole of the first, second, and third intercostal spaces. It could not be heard over the sternum. There was no thrill.—Dr. T. Vincent Dickinson read the notes of a case illustrating the value of Belladonna in the treatment of Broncho-pneumonia in children. The patient, a girl of good physique, aged nine years, was attacked with typical broncho-pneumonia following measles. One-quarter of a grain of extract of belladonna rubbed up with glycerine and chloroform water was administered every four hours and three days afterwards the dose was increased to three-eighths of a grain every two hours, and one-hundredth of a grain of digitalin and one-sixtieth of a grain of strychnine were injected. Improvement was noted the following day, and the belladonna was reduced to one-quarter of a grain. From this stage improvement continued rapidly to convalescence.—The President read notes of a case of Hydramnios in the fifth month of pregnancy. The patient, who was 37 years of age and married, had five children, the last being one year and ten months old. The abdomen appeared to be larger than in former pregnancies of the same date and it was now found to be much distended by a tumour reaching up to the ensiform cartilage which was dull on percussion and gave throughout a very distinct and superficial feeling of fluid. Per vaginam the cervix was found to be soft and the os was dilated so as to admit the finger; ballottement was easily obtained; and the membranes were bulging into the cervical canal. Hydramnios was diagnosed. Under ether the os was gradually dilated with the finger until all the fingers could be introduced; the membranes were ruptured and the fluid was allowed to escape very gradually the hand being used occasionally to close the canal. Two children were delivered by turning, perforation of the skull being necessary. Altogether ten pints of amniotic fluid were collected. The

placenta came away easily by expression, with no post-partum hæmorrhage. There was a single placenta with two amniotic cavities. The patient made an uninterrupted recovery. The history in this case was fairly typical. A multipara has a normal pregnancy up to the fourth or fifth month when the abdomen enlarges rapidly and causes extreme distress from pressure. The case usually ends in abortion before the end of the seventh month. The condition is very common in twin pregnancies. The causes of the condition are doubtful. The symptoms resemble those of pregnancy complicated by an ovarian cyst, and the chief sign as an aid to diagnosis consists in the intermittent contractions of the uterine walls, which were very distinctly felt in this case and affected all parts of the tumour. The treatment here adopted was correct, as limited aspiration had been tried and had failed and drugs were useless. The children very seldom survive for many hours.

EPIDEMIOLOGICAL SOCIETY.—At a meeting of this society held on April 18th, Dr. Patrick Manson, C.M.G., the President, being in the chair, Dr. J. C. Thresh, medical officer of health of the Essex County Council, read a paper on Small-pox Hospitals and the Spread of Infection which was published in THE LANCET of April 26th, p. 1172.—Dr. A. Newsholme was not convinced by Dr. Thresh's arguments; more or less surreptitious intercourse did take place between the ships and the shore. He would like to have had a complete history of the first dozen or so cases, on which the whole subsequent course of the epidemic might depend. The mere fact of one district suffering more than others was not sufficient, for so did West Ham with no hospital in its vicinity. Dr. Thresh spoke of miles whereas Mr. W. H. Power did not go beyond quarters of miles, and he had referred to *prevailing* winds without saying whether the outbreaks corresponded with changes in the actual direction. He would allow 40 patients in a hospital and had seen no harm result from 100 or 350, though Mr. Power saw a possible danger from nine. The theories of aerial diffusion and the concentration of the poison threatened to reduce the question of hospital provision to an absurdity and an impossibility.—Dr. L. Parkes believed in aerial diffusion up to perhaps a mile and that small-pox behaved differently from other fevers. If, however, they would but adopt the German system of universal vaccination and compulsory revaccination there would be no need for hospitals at all.—Dr. E. W. Goodall pointed out that if Mr. Power's comparison of a hospital to a fire were good the wisdom of piling up all our infective material in one place was very doubtful. He would like to know whether the closure of the small-pox hospitals in London had effected a change in the local incidence of the disease as shown in Mr. Power's series of maps since 1860, or whether it still haunted the same localities. The susceptibility of workmen about a hospital to small-pox and fevers was mainly a question of age incidence. Dr. Thresh attached much importance to strong winds as vehicles whereas Mr. Power taught that the infection spread further in calm, foggy weather.—Major W. G. Macpherson said that at Gibraltar in the epidemic of 1893-95 he or his inspectors had visited every case and had been able to trace it to its source in Spain or Africa. Until the publication of Mr. Power's report the cases had been treated in an old building in the very heart of the city and they were afterwards accommodated in one 400 yards outside, but never had he had any evidence of aerial infection. The spread of the disease was invariably the result of delayed notification, home treatment, or concealment of cases, and when a patient had been promptly removed secondary cases were unknown; infant vaccination was strictly enforced.—Dr. S. Richmond, medical officer of health of Dartford, said that of 200 cases in that district 95 patients were employed as workmen or tradesmen about the Gore Farm Hospital, 60 cases at Swanscombe to the windward of the hospital were traced to labourers and others from London, and altogether there were not 40 unaccounted for by ordinary personal contact.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—A meeting of this society was held on April 24th, Dr. A. J. Harrison, the President, being in the chair.—The President announced that as Dr. Unna's oration at the annual meeting would deal with the subject of Eczema it would be interesting if members brought forward carefully selected cases to illustrate the subject.—The President then read notes giving the termination of a case which he reported to the society in February, 1901, with the provisional diagnosis Senile Syphilis. The patient, a man, aged 74 years, had recently developed peculiar looking growths on the thigh. He had suffered from syphilis 50 years previously, but he had shown no further manifestation of the disease and his children were not affected. He improved for a time under iodide of potassium with a mercurial inunction. Gradually, however, his health failed and he died eventually from cardiac failure. The growth proved to be a round-celled sarcoma. There was no evidence clinically of sarcoma of the internal organs. The President considered the probability of this being a case of primary sarcoma of the skin.—Some fine drawings and microscopic specimens illustrating the case were exhibited. The President was asked to allow the former to be reproduced in the Transactions and he gave his consent.—The following cases were shown:—Dr. G. N. Meachen (for Dr. Abraham): 1. A Case for Diagnosis. This was recognised as an instance of the white spot dermatosis described by Dr. Westberg from one of Unna's cases. On the arms were minute white atrophic spots, each surrounded by an extremely narrow erythematous border. This latter sign was not present in Unna's case. 2. A case of Erythema following vaccination in a man who also showed Lichen Planus on the legs. 3. A case of Milium affecting nearly the whole of the face of a baby.—Dr. Edward Stainer showed: (1) A case of Hyperkeratosis of the palms and soles in a girl, aged 15 years, no cause for which could be discovered; and (2) a child showing Multiple Acanthomata on the face and hands.—Dr. Graham Little showed: (1) A baby suffering from Congenital Syphilis complicated by Eczema; and (2) a woman suffering from Syphilis who had developed an intense Iodide Eruption.—Dr. A. Eddowes showed: (1) A case of Healed Lupus treated by complete excision; and (2) a child suffering from Hydroa Vacciniforme. The eruption affected the central part of the face and the back of each hand. It had recurred three years in succession. A microscopic specimen from the case was exhibited at the same time.—Dr. W. Warde (for Dr. Abraham) showed a case of Thrombotic Lupus. The patient, a woman, had 36 years previously had many scrofulous ulcers. All healed save one and that remained infiltrated. One year ago the patient had an attack of erysipelas and some months after the face became covered by an eruption of small lupus nodules.—Mr. G. Pernet showed sections from a case of Yaws stained by Pappenheim's method to demonstrate plasma cells.

WIGAN MEDICAL SOCIETY.—The ordinary meeting of this society was held on April 17th, Mr. T. M. Angior, the President, being in the chair.—The President gave his address on Diphtheria and Its Treatment. He drew comparisons between the definitions of diphtheria of the older text-books and those of to-day. He also compared the treatment of diphtheria in the pre-antitoxin period with that at the present time. This was illustrated by notes on cases which he had attended before 1895 and after that date, showing a high rate of mortality when serum was not used as compared with to-day. He spoke on the advisability of its early use in the disease and of repeating the injections two or three times if necessary. He remarked on one particular case (fatal) where serum was not used until from the seventh to the tenth day of disease, which was too late to be efficacious. He emphasised the necessity of discussion before medical societies of this particular disease, whilst certain authorities recently had been tempted to hold the antitoxin treatment in disfavour. Complications which had been said to arise from the use of serum were touched upon; he (the President) had experienced none. He mentioned the fact of the antitoxin serum having been administered by the mouth and with satisfactory results, and suggested that this might be a preferable mode rather than risk any tendency to tetanus due to puncture in patients with nerve idiosyncrasies.—An interesting discussion followed, in which Mr. J. Chronnell, Mr. W. Latham, Mr. H. Winstanley, Dr. F. Rees, Dr. J. Blair, Mr. Maurice McElligott, and the honorary secretary took part. A consensus of opinion advocated the antitoxin treatment from as early a period as possible and with regard to isolation that at least three weeks should be enforced.—The President replied.—Mr. W. Mitchell Roocroft then read notes on the following cases: (1) Gastro-jejunostomy; (2) Abdominal Hysterectomy; and (3) Nephrolithotomy.—An interesting discussion followed and the following members took part: the President, Dr. Rees, Dr. R. P. White, Mr. C. M. Brady, Dr. E. H. Monks, and Dr. Blair. Mr. Roocroft replied

PLAISTOW AND CANNING TOWN MEDICAL SOCIETY.—A meeting of this society was held on April 24th, Mr. Percy Rose being in the chair.—After an exhibition of interesting cases and also of macroscopic and microscopic pathological specimens Dr. W. J. Hadley gave an address on Some Points in the Diagnosis, Prognosis, and Treatment of Pulmonary Tuberculosis. The points emphasised were the necessity for early diagnosis in order to get the best results to treatment and the differential diagnosis between tuberculosis and some other chest and pulmonary affections. The methods of diagnosis were from symptoms, signs, and examination of the sputum. Symptoms were generally present and signs not infrequently absent in the early cases. The testing of sputa for bacilli was the only sure test, and whilst positive results to such testing were conclusive negative results could only be relied on after several repetitions. Differential diagnosis was then given between tuberculous disease and (1) bronchitis; (2) pulmonary growth and other intra-thoracic tumours; (3) syphilis; (4) actinomycosis; (5) hydatid; (6) aspergillosis; (7) bronchiectasis, with or without fibroid lung; (8) pulmonary gangrene; and (9) foreign body. Prognosis was influenced by (1) the family history; (2) the occupation; (3) the age; (4) the comparison of the duration of the disease with the progress which it had made; (5) the comparison of constitutional disturbance with the extent of the lesion; and (6) the conditions under which the cure was to be attempted and maintained. The rest of the address was devoted to treatment, which was divided into preventive, general, and the special treatment of symptoms and complications.—A general discussion followed and a number of questions were put to the reader of the paper.—The meeting concluded by a hearty vote of thanks being given to Dr. Hadley for his interesting address.

GLASGOW SOUTHERN MEDICAL SOCIETY.—A meeting of this society was held on April 17th, Dr. John Stewart, the President, being in the chair.—Dr. G. H. Edington showed a patient, a boy, aged 11 years, who was the subject of Coxa Vara. In a short statement the history, the symptoms, and the treatment of this very uncommon complaint were in turn reviewed. Special reference was also made to the differential diagnosis from morbus coxæ.—The committee appointed to draw up a protest against the recent edict of the General Medical Council with reference to the keeping of open shops or "medical halls" and the sale of poisons then gave the result of its deliberations. The following protest was submitted and unanimously approved of by the meeting:—

James Robertson, Esq., Registrar of Scottish Branch of the General Council of Medical Education and Registration of the United Kingdom.

SIR,—We, the undersigned, in name and on behalf of the Glasgow Southern Medical Society, hereby protest against the notice of the General Medical Council to registered medical practitioners published in the *Glasgow Herald* of Dec. 14th, 1901, as being unwarrantable, oppressive, and vexatious.

(Signed) JOHN STEWART, President.
DUNCAN MACGILVRAY, Vice-President.
THOMAS FORREST, Treasurer.
JOHN FRASER ORR, Secretary.
ANDREW WAUCHOPE, Editorial Secretary.
JAMES FORRESTER, } Members.
LACHLAN BURGES, }

PATHOLOGICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on April 16th, Dr. J. Collier being in the chair.—Mr. F. A. Southam read a paper on a case of Fat-embolism following a Compound Fracture of the Tibia, due to direct violence, occurring in a man, aged 43 years (*vide* p. 1240 of our present issue).—Dr. A. Knyvett Gordon showed a Continuous Suture that had been passed per anum on the tenth day after Laparotomy, and Suture of a Perforation in the lower end of the Ileum, occuring in the second week of a relapse of enteric fever. The patient was a girl, aged eight years, who after the operation went through the remainder of the relapse of enteric fever and made an uneventful recovery. The passage of the suture was not attended by any constitutional disturbance. In sewing up the ulcer a continuous suture was used and Dr. Gordon attributed the sloughing that had taken place to the pressure of the silk over the entire area sewn up, stating, however, that he was inclined to prefer the continuous suture on account of the rapidity with which the stitches could be inserted, a most important point in dealing with the lesion of enteric fever. In this case the duration of the operation was 20 minutes.—Other preparations were exhibited as card specimens.

ERRATUM.—In THE LANCET of April 26th, p. 1182, in the report of Dr. E. E. Glynn's paper read before the Pathological Section of the Liverpool Medical Institution, the words, "In two cases at least cancer appeared to have originated in a previous chronic ulcer," should be, "In two cases it was demonstrated that cancer had originated in a previous chronic ulcer."

Reviews and Notices of Books.

Diseases of the Intestines. By Dr. J. BOAS, Specialist for Gastro-intestinal Diseases in Berlin. Authorised translation from the first German edition, with special additions by SEYMOUR BASCH, M.D. London: Henry Kimpton. 1901. Pp. 562. Price 21*s*.

THE popularity which Dr. Boas's treatise has enjoyed abroad and the absence of any detailed and exhaustive work on intestinal diseases in English have led to the publication of the present translation. Dr. Basch has performed his task well and has produced an English edition free from the characteristics of German grammatical construction. The book is intended more especially for the requirements of the general practitioner, but containing, as it does, an exhaustive and concise description of physiologico-chemical processes and laboratory methods, it will also prove of value to scientific investigators.

The first two chapters of the book deal with anatomical, histological, physiological, and physiologico-chemical points which must be thoroughly understood before a comprehensive knowledge of the diseases of the intestines can be obtained. The various methods of examining patients are then minutely described. The chapter on Examination of the Fæces is an important one; the microscopical and chemical examinations are considered mainly in regard to the clinical aspects and the diagnostic importance of the various tests is fully discussed. The chapter on Acute and Chronic Intestinal Catarrh contains much useful information and the remarks on treatment well-deserve attention, although the dietetic regimen is scarcely that which is usually adopted in this country.

The surgeon will find much to interest him in the chapter on Intestinal Neoplasms. A good *résumé* is given of the various operations which have been performed for the removal of the growths and Czerny's extensive statistics are quoted. The results are encouraging but the exact figures are too involved to reproduce in a review. The chapter on Intestinal Stenosis and Intestinal Obstruction is also well arranged. The classification introduced by Sir Frederick Treves is adopted but Dr. Boas makes many original observations. The remarks on Appendicitis will naturally attract attention and the symptoms of that condition will be found accurately and concisely described. The diagnostic and prognostic importance of the temperature in appendicitis is rightly insisted upon and stress is also laid on the characters of the pulse. Severe peritonitis may exist without any rise of the temperature and it is in these cases that the pulse becomes of so much importance; the frequency and regularity (or the reverse) should therefore be constantly noted. The section on Differential Diagnosis is also worthy of notice. The indications for operation are fully discussed. The views of various observers are duly noted and clear rules are given as to when, in Dr. Boas's opinion, the aid of the surgeon should be called in. In operating in cases of chronic appendicitis Dr. Boas considers that the social status and the vocation of the patient are of great importance in deciding for, or against, an operation. In the case of a patient who is so situated that he can take every possible care of himself an operation will probably not be so urgently

called for as in one who has to work hard for a living. In relapsing appendicitis, especially among the working classes, operative interference is indicated when the attacks occur at short intervals and become more and more severe. We may direct attention to the chapter on Nervous Diseases of the Intestines. Many affections of common occurrence are there described and numerous valuable hints in regard to treatment are given.

The illustrations throughout the book are good and are well produced. The whole work is an interesting one and will amply repay perusal.

Atlas und Grundriss der Psychiatrie. (Atlas and Manual of Insanity.) Von Privat-dozent Dr. W. WEYGANDT in Würzburg. With 24 coloured Plates by JOH. FINK and W. FREYTAG, and 276 Illustrations. Munich: J. F. Lehmann. 1902. Pp. 663. Price 16 marks.

THIS text-book is the twenty-seventh volume of Lehmann's Medical Atlas and Manual Series. Although a treatise on insanity does not lend itself to illustrations to the same extent as do works on other branches of medicine, nevertheless a great effort has been made to maintain this feature of the series in the present volume and, it must be admitted, with considerable success. An excellent collection of types, for the most part original and taken from photographs by the author, has been reproduced to represent the various forms of mental disease, and many of the cases which are cited to illustrate the text are accompanied by a portrait of the patient, forming together as objective and practical a presentation of the subject as is possible.

The first part of the book takes a general view of the subject. The author commences with a short but clear exposition of the normal psychological processes and then proceeds to demonstrate the abnormal variations to which these are liable. The principles laid down are thoroughly sound and orthodox; in dealing with the abnormal the reader is always carried back to the normal and an endeavour is made to show the different stages by which the one condition may develop from the other. The pathological account is somewhat scanty and strictly anatomical. The author has nothing to tell us about general pathological or psycho-pathological principles or theories. A chapter is devoted to the treatment of the insane, in which the arrangement of model asylums is described with considerable detail, ground plans of the buildings and other details being given. The author advocates the hydropathic treatment, and especially the continuous bath, for many cases and he strongly urges the total exclusion of alcohol from all asylums.

The second part of the book deals with mental diseases *seriatim* and in his clinical classification Dr. Weygandt follows Kraepelin. The descriptions of the diseases are concise and thorough, and in a comparatively small space a clear and lively clinical picture is given of the disease under consideration. Altogether 143 cases are cited to illustrate typical and atypical mental conditions. The chapter on Epilepsy is very interesting and instructive and the author's remarks on the relationship of epilepsy to alcohol are suggestive, especially the opinion here held, as put forward by Kraepelin, that certain forms of dipsomania in which periods of alcoholic excess alternate with intervals of sobriety are epileptic in origin and nature. Although pregnancy and childbirth are, of course, frequently referred to in the text as immediate causes of different forms of insanity, the usual custom of devoting a separate section to this part of the subject is not adhered to. On the question of alcohol Dr. Weygandt is absolutely uncompromising. He cites experiments showing that a man who takes one litre of beer a day, equivalent to 45 grammes of alcohol (about one and a half ounces), thereby reduces his capacity for work and he would stigmatise such a man as a "drinker." He discusses the subject at length in its social aspect and makes an eloquent appeal for more stringent measures against the terrible ravages caused by drink.

On the whole the book is a thoroughly useful manual on the subject with which it deals and a worthy contribution to the series.

A Handbook of Pathological Anatomy and Histology. By FRANCIS DELAFIELD, M.D., Professor of the Practice of Medicine, Columbia University, New York, and T. MITCHELL PRUDDEN, M.D., Professor of Pathology in the same University. Sixth edition. London: Baillière, Tindall, and Cox. 1902. Royal 8vo, pp. xix. and 819. Price 21*s.*

FORMER editions of this handbook have probably been better known in America than in this country. There is good reason for its taking here as prominent a place as a text-book for students as it has long done on its merits there. We gather from the preface that Professor Delafield has retired from an active share in the revision of the work, so that the responsibility for this edition rests mainly with Professor Prudden who has secured the assistance of several able coadjutors in carrying out his task.

The plan of the book is comprehensive. It is divided into three parts, the first dealing with the methods of post-mortem examination and of preserving and examining pathological tissues, the second being devoted to general pathology in which bacteriology takes its due place, and the third, and largest, comprising the special pathology of the different tissues and organs. The first part is short but eminently practical and useful; it describes thoroughly and completely the way in which a body should be examined after death, both from a pathological and a medico-legal standpoint. Special sections are devoted to cases of suspected poisoning and to examination of the bodies of newly-born children, while an adequate account is given of the lesions found in the commoner forms of violent and sudden death. The chapter devoted to Microscopic Technique is necessarily short and makes no pretence at completeness, but it is all to the point and contains a large number of useful hints.

The second part of the book, devoted to general pathology, occupies some 275 pages, but this includes an account of all the important infective diseases. It is too often the case that a writer on general pathology thinks it incumbent upon him to include in his treatise a complete text-book on bacteriology. In this book an admirable restraint has been exercised. Just so much detail has been introduced concerning the form, structure, and physiology of bacteria and other micro-parasites as to render intelligible to the student the part which these organisms play in pathology, but it is all done, and well done, in little more than 30 pages. The only omission which we see reason to regret is a criticism of modern theories of immunity which might well have found place in a work on general pathology. Such criticism has, however, been deemed outside the scope of the book. The various infections are excellently and tersely described, the morbid anatomy and histology of each preceding the account of its special microbe. The different chapters in the second part of the book show some variations in the fulness of their detail. That dealing with Atrophy, Degeneration, and Necrosis appears to us somewhat inadequate—lardaceous disease, for example, being dismissed in little more than a single page. The chapter on Inflammation and the Healing of Wounds is, however, excellent as is also that on Tumours.

The third portion of the work, dealing with special pathology, is naturally the largest, occupying some 430 pages. Even in this space it is obviously impossible to deal with such a subject in anything approaching fulness of detail. Nevertheless the account of the morbid anatomy and histology of the different organs is thoroughly good and excellently adapted for the student. We have tested it as a

manual of reference in routine pathological work and have seldom found it wanting in at least a short account of the lesion under consideration. If, indeed, we were asked to name the distinguishing feature of this book we should unhesitatingly mention its admirable perspective. We have had occasion to review in these columns more than one work of similar aims in which too much had been attempted and in which the concise and lucid treatment required by the modern student of medicine in a useful text-book was conspicuously absent. Here this is not so and we can recommend the volume most heartily to students and practitioners as a first-rate guide to modern pathology.

Our review would be incomplete without reference to the figures which so profusely illustrate the subject-matter. These include 13 full-page plates and no less than 453 illustrations in the text; a good many are in colours. They are clear and artistic and are printed with unusual distinctness owing to the fine character of the paper employed. It is not often that so well-illustrated a text-book is met with.

Therapeutics: its Principles and Practice. By HORATIO C. WOOD, M.D., LL.D., Professor of Materia Medica and Therapeutics and Clinical Professor of Diseases of the Nervous System in the University of Pennsylvania; and HORATIO C. WOOD, jun., M.D., Demonstrator of Pharmacodynamics in the University of Pennsylvania. Eleventh edition. London: Smith, Elder, and Co. 1902. Pp. 850. Price 18*s.*

THE eleventh edition of a work requires, as a rule, but few words from the reviewer. In this instance, however, the original author has been joined by his son and the result has been that the present volume, although retaining many of its old features, is so different from its predecessors as properly to be considered a new book. The principal changes have consisted in making the various articles conform more closely to a uniform and carefully-arranged scheme. The descriptions of the general effects produced by drugs in the lower animals, minor theoretical discussions, and other matters of less importance than those considered in the general text have been printed in smaller type. The literary references have been omitted from the body of the text and have been placed at the end of the various chapters. This plan makes the reading of the book pleasanter and the student's attention is not distracted by the constant interpolation of the names of observers and the work or publication from which the reference has been taken. An excellent method is adopted of giving a summary in large type of the action of all the principal drugs. This is most convenient for the purpose of reference and enables the student to systematise his knowledge in such a manner as to be easily retained. For English readers, however, the book has one great disadvantage—the preparations of the English Pharmacopœia are not given; consequently, although much information may be gained from the work as to the principles of therapeutics, from the point of view of materia medica the volume is of little use.

Forensic Medicine and Toxicology. By J. DIXON MANN, M.D. St. And., F.R.C.P. Lond., Professor of Forensic Medicine and Toxicology in Owens College, Manchester; Examiner in Forensic Medicine in the University of London and in the Victoria University; Physician to the Salford Royal Hospital. Third edition, revised and enlarged. London: Charles Griffin and Co. 1902. Pp. 692. Price 21*s.*

THE text of this very excellent work on forensic medicine and toxicology has been thoroughly revised in accordance with the results of recent scientific researches on the subjects of which it treats. The main additions are to be found in Part III. which is concerned with toxicology. The section on Arsenical Poisoning has been re-written, advantage being taken of the observations which were made during the recent outbreak in Lancashire. The remarks on the elimination of arsenic have been considerably amplified, Dr. Dixon Mann's own observations being fully incorporated in the general text. He points out that arsenic has been regarded as a non-cumulative poison, and when only a few doses are taken this view is correct. "Cumulative," however, is a relative term and although arsenic does not appear to combine intimately with the tissues as some of the heavy metals do, still when small doses are taken into the system in close succession for a considerable period, as in chronic poisoning, a certain residuum remains in the tissues after the last dose has been taken for a much longer time than was formerly supposed. In one case DR. DIXON MANN found arsenic in tissues examined 52 days after the last dose had been taken. In chronic arsenical poisoning arsenic may be detected over prolonged periods (49 days) in the exfoliated horny scales of the epidermis, in the nails, and in the hair. These results are interesting and of considerable practical value. Some additional poisons have been included in this edition, amongst these being digitalin, fly-papers, formalin, heroin, hydrofluoric acid, hyoscine, and "paregoric." The list of poisons is now very complete and forms a valuable source of reference for the practitioner.

We consider this work to be one of the best text-books on forensic medicine and toxicology now in print and we cordially recommend it to students who are preparing for their examinations and also to practitioners who in the course of their professional work may at any time be called upon to assist in the investigation of a medico-legal case.

LIBRARY TABLE.

Atlas and Principles of Bacteriology and Text-book of Special Bacteriologic Diagnosis. By Professor K. B. LEHMANN and Dr. R. O. NEUMANN. Authorised translation from the second enlarged and revised German edition. Edited by G. H. WEAVER, M.D., of the Rush Medical College, Chicago. London and Philadelphia: W. B. Saunders and Co. 1901. In two vols. Atlas, 69 plates; text, 511 pages. Price 21*s.*—It is rather more than two years since we reviewed in these columns the German original of this translation. We were able to speak of it, and especially of its textual part, in terms of high commendation; we have no reason for altering our opinion and, indeed, a perusal of this translation only inclines us to emphasise our former verdict. The plates forming the atlas are as good as can be expected in the case of inexpensive coloured figures and are of undoubted utility. Professor Lehmann's chapters on General Bacteriology are a most admirable epitome of current knowledge on the subject and well repay the reader. The larger part of the second volume is devoted to special bacteriology and is so arranged as to facilitate the recognition of the most important species which may be encountered. This is done by means of synoptic tables, designed on a more or less dichotomic basis, at the head of each great division of the family; from these the student is referred to the detailed specific descriptions. A due sense of proportion is observed in the amount of space allotted to each species, those of practical importance being the more fully treated. A large amount of careful work appears to have been performed in the authors' laboratories at Würzburg in the way of correlating species which have been described under different names; the task of identification is thus considerably reduced and we have found the work a more trustworthy guide to the recognition of unfamiliar species than any with which we are acquainted. The translation is accurate and readable, though here and there it is unmistakably American. We can recommend the book as a most useful adjunct to every bacteriological laboratory.

Handbook of Obstetric Nursing. By F. W. N. HAULTAIN, M.D., F.R.C.P. Edin., and J. HAIG FERGUSON, M.D., F.R.C.P. Edin. Fourth edition, revised and enlarged. Edinburgh and London: Young J. Pentland. 1902. Pp. 267, with Frontispiece and 37 Engravings. Price 5*s.*—This excellent little handbook for the use of obstetric nurses has now reached a fourth edition. The authors have revised the account of the management of labour and more especially that of the third stage. They have also drawn up rules applicable to the antiseptic management of labour, both in hospital and in private practice. The book has been carefully revised and brought up to date. It is a good example of the kind of book suitable for obstetric nurses and does not err on the side of giving too detailed information. The authors have again included in an appendix the very useful memorandum issued by the British Medical Association of the regulations proposed for adoption by the Obstetric Nurses Board.

The Life of St. Luke. By EDWARD CLAPTON, M.D., F.R.C.P. Lond., late Physician to St. Thomas's Hospital. London: J. and A. Churchill. 1902. Pp. 80. Price 1*s.* 6*d.*—This unpretending little work concerning the life of the patron saint of the medical profession consists in a catena of statements put together from the Gospel according to St. Luke, from the Acts of the Apostles, from Josephus, and from patristic writers. Besides these historical statements Dr. Clapton puts forward some theories of his own which are certainly reasonable enough in most cases. His theory that "the thorn in the flesh, the messenger of Satan," referred to by St. Paul, was "the mosquito produced malaria," Satan—i.e., Beelzebub—being the lord of flies, is ingenious and quite as likely to be true as any other theory. Dr. Clapton objects to physicians at the present day being called disciples of Æsculapius because, he says, the Asclepiades of Pergamos were quacks. Very likely they were, but so far as we know Æsculapius was not and the treatment as carried out at his chief shrine, Epidauros, was quite sound. We do not object to Christians being called disciples of Christ because the "Christian Scientists" are quacks.

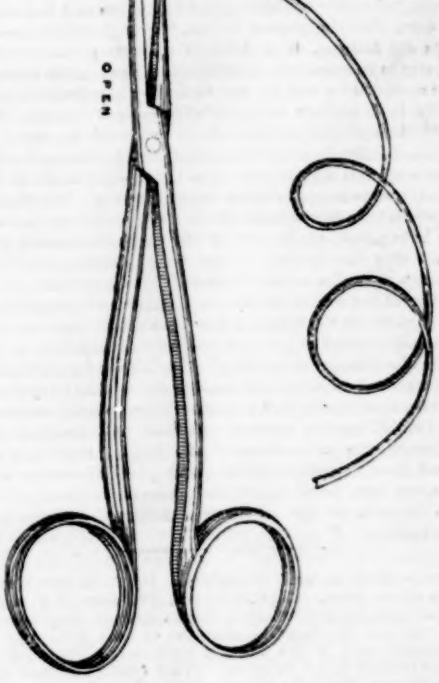
The Book of Asparagus, with Sections also on Celery, Salsify, Scorzonera, and Seakale. By CHARLES ILOTT, F.R.H.S., Lecturer on Horticulture to the Cornwall County Council, together with Chapters on the History, Decorative Uses, and Cookery of these Vegetables by the Editor. London and New York: John Lane. 1901. Pp. 108. Price 2*s.* 6*d.*—This is the first of a series of handbooks on practical gardening and is edited by Mr. Harry Roberts, F.R.C.S., who may be congratulated on having produced a useful and pretty little book on a very interesting subject. Asparagus is a well appreciated vegetable which has well-marked and well-known physiological effects on man; seakale, like most of the other members of the order to which it belongs, has antiscorbutic properties; salsify and scorzonera are nourishing and palatable vegetables and deserve to be more generally grown. Celery is, of course, a universal favourite, but celeriac is appreciated chiefly by those who associate it with bright and happy days spent in Italy. It hardly falls within our scope to discuss the culture of vegetables and it must suffice to say that Mr. Ilott generally gives good advice. His teaching on asparagus represents a position about midway between the most enlightened teaching of the best French specialists on the subject and the crass ignorance of the ordinary English gentleman's gardener. The most interesting part of the book is that contributed by Mr. Roberts on the history of the vegetables, and perhaps the most useful that on the methods which may be employed in preparing them for the table. The vegetable *entrée* is too much neglected in England, a fact to be regretted both from a gastronomic and from a hygienic point of view. The book is well printed and contains 17 illustrations, some of which are very old friends.

A System of Physiologic Therapeutics. Vol. IV. Climatology. Book II.—In the description and review of this volume which appeared in THE LANCET of April 26th, 1902, page 1189, it was omitted to state that the work is by F. Parkes Weber, M.A., M.D., F.R.C.P. Lond., with the collaboration for America of Guy Hinsdale, A.M., M.D. Dr. Parkes Weber states that the connexion in that review of Dr. Coan's name with the remarks on sea-bathing is erroneous. Fuller particulars as to the title, authors, and editor of the work will be found in THE LANCET of April 19th, 1902, page 1115, above the review of Volume III. Book I.

New Inventions.

NEW FORCEPS FOR THE INTRODUCTION OF DRAINAGE-TUBES.

DIFFICULTY having from time to time arisen in fixing Southey's fine drainage-tubing on the cannulas I have had made for me a pair of forceps which will undoubtedly do



away with that difficulty. The illustration speaks for itself. Mr. Staniforth of Church-street, Cardiff, is the maker.

Cardiff. T. GARRETT HORDER.

A NEW FORM OF SPLINTING.

As a general practitioner I have often felt the need that exists for some form of light cheap splinting which can easily be cut when wanted into any desired shape and size, for it is

practically impossible for a country or suburban general practitioner to keep ready-made splints in sufficient variety of shapes and sizes for all the various fractures which he may at any time be called upon to treat. Gooch splinting is good and convenient but many splints, such as right-angled ones, cannot be made from it. Poroplastic also is good but is rather heavy, expensive, and requires moulding. Some time ago I made some splinting from corrugated boards—i.e., corrugated paper fastened between two sheets of cardboard. By fastening two such corrugated boards together with the corrugations in one at right angles to the corrugations in the other I obtained a splinting which I have used for about a year. This splinting has the following advantages:—(1) it is light; (2) it is easily and quickly cut with a penknife into any desired shape; (3) it is quite strong enough for any ordinary splint except a long hip-splint; (4) it requires very little or no padding, as the material itself is comfortable against a limb; (5) it is transparent to x rays, a rather important matter nowadays; and, lastly, (6) it is cheap. Further, it may be strengthened as much as can possibly be desired by the insertion of wires, such as bicycle spokes, into some of the corrugations, and in right-angled splints some of the spokes will go one way in one set of corrugations and some at right angles in the other set of corrugations, and in splints longer than bicycle spokes, the spokes can be inserted from each end, overlapping in the middle of the splint. Also, by cutting the splinting into the desired shape, then inserting a sufficient number of spokes or other wires, it can be then bent into many shapes suitable for orthopædic purposes. For instance, I have used it successfully for splints for talipes plantaris to be worn at night instead of a Scarpa's shoe, the foot-piece being forcibly bent round at right angles to the leg-piece, and the angle can be easily strengthened by another such piece glued on to the outside. Tapes or elastics are easily fastened between the wires or spokes to hold down the toes in cases of hammer-toe, &c. The bicycle spokes, which are very strong and tough, are easily cut into desired lengths by a special though cheap cutter or simply "nicked" with a file and then broken off. For x-ray purposes these spokes can be withdrawn from all ordinary splints if desired without taking the splint off the limb and so again inserted. This splinting will not be so much required for stationary civil hospitals or by surgeons living near skilled instrument-makers, but by army and other moving hospitals, ambulances, and by the great numbers of general practitioners living in the country or suburbs who have to make their own splints as required.

Messrs. Arnold and Sons have recently made some of this splinting covered with white paper cardboard, in sizes of 30 inches square, and they can also supply the bicycle spokes and spoke-cutters.

GEORGE B. BATTEN, M.D. Edin.

Dulwich.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary meeting of the Comitia was held on April 24th, SIR WILLIAM SELBY CHURCH, Bart., the President, being in the chair.

The PRESIDENT announced that Sir Richard Douglas Powell, Bart., K.C.V.O., had consented to act as the delegate of the College at the Medical Congress to be held in Cairo in December and that Dr. J. F. Payne would represent the College at the tercentenary celebration of the Bodleian Library at Oxford. The President also announced that owing to the illness of Dr. J. W. Washbourn the Croonian Lectures would not be delivered until November. The President further informed the College that the following Fellows had been appointed to act as a committee to make suitable arrangements for the erection of stands and decorations at the time of the Coronation: The College Officers, Dr. C. Theodore Williams, Dr. W. H. Allchin, and Dr. Oswald A. Browne.

The following gentlemen having passed the required examination were admitted Members of the College: Dr. Joseph Shaw Bolton, Dr. William Philip Sutcliffe Branson, Mr. Gerald Godfray Giffard, Dr. Charles Herbert Melland, Dr. Sidney Vere Pearson, Dr. Edward Furniss Potter, and Dr. Walter Henry Maxwell Telling.

Licences to practise physic were granted to 123 gentlemen who had passed the required examination. The Examiners for the Murchison Scholarship reported that they had decided to advise the College not to award the scholarship for this year.

The following Members of the College were on the nomination of the council elected to the Fellowship: Dr. Henry Carr Maudsley (Melbourne, Australia), Dr. William Camac Wilkinson (Sydney, New South Wales), Dr. Frank Montague Pope, Dr. Edward Malins, Dr. William Alfred Wills, Dr. Thomas Hancock Arnold Chaplin, Dr. William Page May, Dr. Arthur George Phear, Dr. George Francis Blacker, Dr. John Fawcett, Dr. Herbert Campbell Thomson, Dr. Albert Sidney Frankau Grünbaum, Dr. James Barr, and Dr. Joseph John Perkins.

The following communications were received: 1. From the secretary of the College of Surgeons reporting certain proceedings of the Council on April 10th. 2. From the General Medical Council submitting certain questions with respect to the courses of study in chemistry, physics, and biology required from candidates for the conjoint diplomas, and announcing that the examinations of the Colleges in those subjects will be visited and reported on for the Council during the present year.

A report was received from Dr. NORMAN MOORE on the proceedings of the General Medical Council at the special session held in February last.

Dr. FREDERICK J. SMITH submitted the draft of a petition from an Association of Licentiates of the College and of Members of the College of Surgeons of England, and asked permission that the petition might be presented to the College by a deputation at a future date. After some discussion, in which Dr. MOORE, Dr. ALLCHIN, and Dr. PAYNE took part, it was resolved, on a motion proposed by Dr. SMITH and seconded by Dr. DAWSON WILLIAMS, that leave should be given for the presentation of the petition, but that it was not the wish of the College that this should be accomplished by means of a deputation.

A report was received from the Committee of Management, dated March 10th. The Walsall Municipal Science and Art Institute was recognised for instruction in chemistry, physics, and practical chemistry. The regulation recently adopted by the General Medical Council with respect to the attendance at a fever hospital in the case of a registered practitioner who desires to obtain the diploma in public health was also referred to and it was resolved that the Committee of Management should draft a letter to the General Medical Council drawing the attention of that council to the disadvantages under which the candidates from London medical schools are placed by the impossibility of their obtaining the necessary instruction at the hospitals of the Metropolitan Asylums Board.

A second report was received from the Committee of Management dated March 17th, in which it was recommended that the course of clinical instruction in lunacy given by Dr. T. Claye Shaw at St. Luke's Hospital, Old-street, London, should be recognised as fulfilling the conditions of Clause 10, Section 1, of the regulations of the Examining Board in England.

Both these reports were adopted. After some further formal business the PRESIDENT dissolved the Comitia.

FESTIVAL DINNER OF ST. MARK'S HOSPITAL.—Sir Joseph Dimsdale, M.P., the Lord Mayor of London, presided over the festival dinner of St. Mark's Hospital, held at the Hôtel Métropole on April 24th to celebrate the sixty-sixth anniversary of the hospital. After the usual loyal toasts had been duly honoured the Lord Mayor gave the toast of the evening, "St. Mark's Hospital." He pointed out that in collecting funds for the hospital they were under a certain amount of disadvantage because the institution rendered assistance to persons suffering from diseases that prevented the friends of the charity from pleading for help with the same freedom and openness in public that was possible in the case of other hospitals. There was an assured annual income of a little over £2000 a year and that had to be increased to £4500. In the course of the evening it was announced that the list of donations reached a total of over £2000. The following gentlemen spoke in the course of the evening: Mr. R. B. Martin, M.P. (treasurer), Mr. Alderman and Sheriff Bell, Mr. D. H. Goodsall, Mr. F. S. Edwards, Mr. E. F. Carey, and Viscount Dungarvan.

THE LANCET.

LONDON: SATURDAY, MAY 3, 1902.

Some Points Relating to Massage.

THE Society of Trained Masseuses have recently had an opportunity of hearing an address from Sir WILLIAM H. BENNETT which contained many points of direct interest to the medical profession. It is an old saying that there is probably no instrument that is powerful for good which is not also powerful for evil and the history of massage amply confirms this view. Sir WILLIAM BENNETT gave an instructive account of his recollections of the old-fashioned "rubbers"—"very respectable people, rather portly in figure as a rule, strictly honest according to their lights; their main purpose seemed to be the rubbing away of knots in muscles which did not exist and the dispersing of curious conditions of the veins which were also of doubtful existence." From this it will be seen that the earliest form of massage was more or less of the fraudulent description which the Society of Trained Masseuses has been incorporated to resist. Unfortunately, amongst the laity there is apt to spring up a fashion for some particular form of medical or surgical treatment from which quacks reap a rich harvest. Such a tendency can only have one certain result and that is to bring into disrepute what may really be a most valuable therapeutic measure. Then, rather than appear to pander to a popular error, some practitioners refuse to make any use of the remedy: massage and hypnotism have both suffered in this way. In suitable cases and administered by proper and trained hands massage is admittedly of great value in the treatment of certain arthritic and muscular affections and in particular in diseases of the nervous system, both organic and functional, while it has proved its efficiency in some conditions in which there is failure of nutrition. Yet owing to the manner in which massage has been misapplied there has been a natural tendency amongst many members of the medical profession to use it as little as possible. Quacks have prescribed it, and their prescriptions (as well, for that matter, as those of the medical profession) in respect to massage have been exhibited too often by young women devoid of the slightest knowledge of their subject. Moreover, the way in which the word "massage" has been employed as a cloak for immoral practices has made it stink in all men's nostrils. This, of course, should not be allowed to affect legitimate treatment by the methods of massage, but apart from the attempt of the *fille de joie* to pose as a *sœur de charité*, some of the distrust of massage has been due to the ignorance or incompetency of many of the professional manipulators and to the absurd and extravagant efforts to proclaim it as an exclusive method of treatment.

Within recent years, however, many of the difficulties which at one time beset manipulative treatment have been gradually overcome. Classes have been formed under the guidance of skilled teachers in which male and female attendants have been carefully trained in a thoroughly scientific manner and have acquired a good knowledge of the theory and practice of massage. But something more than this is necessary. It is not difficult for any person to acquire the requisite knowledge of the technique, but certain personal characteristics in the masseur or masseuse are absolutely necessary. Sir WILLIAM BENNETT, in speaking to the Society of Trained Masseuses, referred at length to the absolute necessity that the person who undertakes to administer massage must be physically fit for the task. He rightly suggested that physicians who have had extended experience in the use of massage must have found many times that the masseuse has had a depressing effect upon the patient owing to her own personal peculiarities; and he no less rightly explained the existence of such attendants by pointing out that there are a large number of philanthropic people in the world who are always anxious to assist, either by advice or pecuniary help, others who are in less fortunate circumstances than themselves. Ill-directed kindness has led to the position. Many women who have failed in other callings, generally from ill-health or want of strength or even from some physical deformity, have been sent by philanthropic friends to receive a course of instruction in massage with a view to the gaining of a livelihood. The launching of such persons into the calling of massage is, we maintain, unfair to the individuals themselves, because they cannot possibly succeed; it is unfair to the general body of those who practise massage; and it is especially unfair to any patients who may happen to fall into the hands of persons quite unsuitable to carry out the treatment prescribed. If there is one quality more essential than another in those who practise massage it is that they should be able to exercise a wholesome, invigorating influence upon the patients; but if the masseur or masseuse be the victim of an obvious physical defect or be in bad health an exactly opposite effect can hardly be avoided. A similar result will also follow if the masseuse be wanting in the ordinary amount of tact and kindly feeling towards the patients whom she is asked to attend.

The formation of the Society of Trained Masseuses was really called for if manipulative methods were to be rescued from the keepers of bagnios, from quacks claiming to heal all diseases, and from the hardly less dangerous hands of the uninstructed young lady. One of the essential points for the effective application of massage is that it should only be carried out under the orders of a medical practitioner, for attempts by massage-attendants to treat patients on their own initiative can end only in failure. The fact that a masseuse is a member of the Society of Trained Masseuses is not only a guarantee that she has been well trained but ensures that she will not attempt to practise on her own account. There is a great danger, moreover, that a larger number of persons, especially women, will learn massage than can find employment, and as a matter of fact we believe that already the supply exceeds the demand. By only admitting as members of the society women who are in every way suitable for the calling great assistance will be rendered to the practitioners who make use of massage

in the course of their practice and a deterrent to the overcrowding of the calling will thus be established. While wishing the Incorporated Society of Trained Masseuses continued success we would suggest that male attendants should likewise form a kindred association, or that the existing society should so alter its constitution as to admit both men and women to its body. We strongly urge that the practice of masseurs should be confined to men and that of masseuses to women. This is desirable from many points of view, most of which are too obvious to make it necessary to enter upon the matter here. The masseur is therefore as necessary to the medical practitioner as is the masseuse, and the same steps should be taken to regulate their supply and standardise their attainments.

The Sanitary Oath.

SIR FRANCIS JEUNE and Mr. Justice GORELL BARNES have had posted outside the two courts of the Probate, Divorce, and Admiralty Division notices to witnesses calling their attention to the fact that they may be sworn in the Scotch manner before giving evidence. That is to say, they may be sworn with uplifted hand repeating a solemn invocation to the Deity, instead of taking a book and kissing it after listening to a form repeated by a minor official of the court. The notice to which we refer is repeated outside one of the courts of the Chancery Division and we have every hope that it may become universal. As it is, we may claim the publication of such a notice in the High Court of Justice at all as a victory for a cause that we have long advocated. We have for many years contended that the oath by kissing a book has nothing to commend it, while it is nasty and may become a means of propagation of disease; and we have seen with regret that the statutory permission to swear in the Scotch fashion was, as a rule, not known by witnesses and frequently, also, that judges, coroners, and magistrates were ignorant of it. This permission was given by the Fifth Section of the Oaths Act of 1888, a statute which we owe to the late Mr. BRADLAUGH. The Fifth Section provides that "if any person to whom an oath is administered desires to swear with uplifted hand in the form and manner in which an oath is usually administered in Scotland, he shall be permitted to do so and the oath shall be administered to him in such form and manner without further question." The primary object of this section was, we believe, to allow Scotch witnesses to be sworn in English courts in the manner to which they were accustomed. It is, however, obviously so worded that any one who does not wish to kiss the book may avoid doing so without his religious or other motives becoming the subject of any inquiry. No doubt it would be more satisfactory if a form of oath excluding the kissing of a book were directly prescribed by the legislature, but the power to dispense with the practice, long denounced by us as dirty and dangerous, is a step in the right direction. We trust that the power so given will soon be universally known. It has, however, been to a large extent ignored by coroners, while one county-court judge only, so far as we know—his Honour Judge EMDEN—has been active in calling attention to the Act, posting notices relating to it in his court and doing his best to introduce the sanitary oath among witnesses giving evidence before him. Presumably the small-pox epidemic and the spread of knowledge of sanitary laws have contributed to break down the well-known conservatism of the law courts and to discourage a procedure that had somehow become universal.

The form of swearing by kissing a book is purely one of custom. There is no direct authority for it in any Act of Parliament, or rule, or book of practice. The date also of its introduction is unknown, but this is not because it has been lost in the mists of antiquity, for it is fairly certain that, so recently as at the end of the seventeenth century, if the form existed it was not in any general use. It has been pointed out that COKE in his Institutes makes no mention of kissing the book but writes of the "corporal oath" as thus named because the witness touched with his hand a portion of the Scriptures, and this aspect of the oath no doubt survives in the familiar warning of the usher to the witness to remove the glove before taking the testament for the purpose of kissing it. It is also observed that in the "Book of Oaths," of which an edition was published in 1689, there is no mention of kissing a book. How the kissing originated is, we believe, almost as much a matter of speculation as is the date at which it became frequent or universal. The laying of the hand on the Gospels in swearing is, no doubt, of great antiquity, while the laying of the hand on the altar of a deity in invoking the deity to witness a statement or promise is older than the Gospels. The laying of the hand on the Gospels has its parallel in other countries besides England. The kissing of the book is, however, we believe, peculiar to England, or to England and Ireland, and it is not quite easy to assign its origin to the kissing of relics when we apparently find it introduced in England after all veneration for relics had been swept away and made illegal. It is worth noting that English people were more addicted to kissing once than they are now. Kissing as a form of salutation was so common among them that it excited the interest and amusement of foreigners. ERASMUS refers to it and a Hungarian gentleman who visited London and moved in good society in 1663 was much struck with the way in which men kissed ladies when they greeted them, where Hungarians would have shaken hands. Even Frenchmen in the middle ages held kissing as a peculiarity of the English nation, much as we remark upon it now among the French. It is, therefore, at least possible that the kiss bestowed upon the book in taking an oath may have been not so much a kiss of veneration as a form of salutation or acknowledgment by bodily contact, somewhat more ceremonious than manual contact, but still not associated with any great feeling of solemnity.

That there is any solemnity now surviving in the oath as usually administered in a court of law none will maintain. The rapid gabble of the usher or officer of the court saves time, and this may commend the unceremonious ceremony to the tribunal. The witness not infrequently kisses his thumb and believes that all danger of incurring the wrath of the Divinity if he forswears himself is thus avoided. We can well understand that the perjurer would prefer the oath so taken to the Scotch form. He would not lightly bear

false witness who had raised his hand to heaven and had repeated the words solemnly dictated to him: "I swear by Almighty GOD, and as I shall answer to GOD at the great Day of Judgment, that I will tell the truth, the whole truth, and nothing but the truth, in so far as I know or as the same shall be asked of me." It is, however, urged that if the Scotch oath now permitted became universal through being made compulsory delay would result, particularly with uneducated and stupid witnesses. In order to obviate such delay Mr. F. A. STRINGER, in a letter published in the *Times* on Jan. 12th, 1897, suggested that the Scotch form of oath might be administered according to a method suggested by the practice of French, Belgian, and Spanish courts. In this case the person administering the oath would repeat a form commencing with the words, "You do swear by Almighty GOD," and when he had concluded the person sworn would hold up his hand and say, "I swear by Almighty GOD." We need hardly point out that an oath by Almighty GOD should be binding upon members of all creeds which involve belief in a supreme deity, and that an oath so generally applicable must be to some extent a convenience. In any case, it must not be forgotten that whether the oath is more or less binding to the conscience when administered without bodily contact of a book, there are still the legal penalties of perjury to deter those whose conscience is easily appeased.

Many years may possibly elapse before fresh legislation renders universal and obligatory a sanitary and at the same time an impressive and a reverent form of oath. The step forward upon which we now congratulate those who have urged reform consists in the endeavour of certain judges of the High Court of Justice to make better known the Scotch form which is permitted, but not ordered, for all witnesses, whether Scotch or not. We note, moreover, that these judges preside in that Division in which in 1886 the late Mr. Justice BUTT ridiculed the objection of Dr. T. HARKNESS of Derby to kiss a book which just before had been kissed by two common prostitutes. At least one other medical man had before this called attention to the question, and we had lent support to his view. Since then medical men have frequently protested against being obliged to kiss a book, and since 1888 many have availed themselves of the Act of that year when aware of it and when not prevented from doing so. And we have commended their action. We have not, nor has anyone, proved or asserted the frequent spreading of infectious disease through the taking of the witnesses' oath. We have, however, insisted that kissing the book was uncleanly and that it might in conceivable cases be dangerous. In one case in 1898 Mr. F. D. LYS, late medical officer of health to the District Council of Wareham and Purbeck, ascribed, in his annual report to the council, the death of a policeman to acute ulceration of the throat contracted through taking the witness's oath at petty sessions at Wareham. Besides ourselves many individual medical men and laymen since 1885 have contended on behalf of a sanitary form of swearing, conspicuous among them being Mr. F. A. STRINGER, the author of "Oaths and Affirmations," an experienced official of the High Court of Justice, and Mr. F. W. LOWNDES, late senior surgeon to the Liverpool Police, who has taken a constant and energetic part in the struggle from its commencement. That the success obtained should have come slowly and should be incomplete even now affords a fair instance of the difficulty with which reforms are sometimes brought about, even though they are admitted on all sides to be desirable. It illustrates also the indifference of the general public to sanitary questions that are not brought vividly before them by the actual presence of disease.

The Affairs of the Royal Orthopædic Hospital.

THE affairs of a hospital—its administration, management, and pecuniary arrangements—must always be to medical men as well as to the general public of scarcely less interest than the purely professional side of these charitable institutions. And when difficulties and disagreements arise among those controlling the administration of hospitals it is as a rule a wholesome thing to illuminate the corners of the committee-room wherein the discussions have taken place, so that no one may have the unfortunate impression that things are being done in the name of popular charity that are not for the popular good. Publicity in such matters generally makes for what is just and right, and by freely ventilating disagreements we most easily get the big battalions of the public behind those with whom victory ought to rest. It is with this object that we return to discussion of the affairs of the Royal Orthopædic Hospital. We make no further excuse for once again urging the need for full investigation into the proposed sale of the site of the hospital in Hanover-square. The suggestion that by calling attention to the existence of dissension we may actually damage the institution has been made, but it is a ridiculous one. Every sensible supporter of a hospital likes to feel that his subscription is given where it is rightly spent, and the suspicion that a charity is being mismanaged is vastly more prejudicial to its future than any demand for enlightenment can ever be.

Curiosity has been naturally excited by the fact that the authorities of a hospital possessing a freehold site the value of which is still rising should be anxious to sell their magnificent position and to build a home for themselves elsewhere, while burdening themselves with a rent. The policy is so extraordinary, having in view the grave financial difficulties of other London hospitals, that those responsible for it ought to wish to make it intelligible. Either the need for ready money must be urgent to an extent that is unknown to the public or the demand for an orthopædic hospital upon another site must be more pressing than we, or any members of the medical profession, have ever suspected. The committee of management, however, which is proposing the sale, has made no attempt to demonstrate the need for either. Indeed, if ready money were the object the committee possesses in its freehold a means of raising it, while the fact that a sum of £2000 was spent recently upon the repairing of the present building points neither to acute need of cash nor to a long-established belief that Oxford-street is an unsuitable locality for the work. On one thing information is particularly needed. If a new building is really desirable why is not the very reasonable

suggestion of the opponents of the sale considered? They desire to rebuild the hospital upon its present site, believing it an unsound financial proceeding to sacrifice the freehold. Their view is that the hospital should be rebuilt on part of the site and that the income of the charity could be increased by letting the remainder at a high rent. With a frontage upon Oxford-street and another upon Hanover-square the prospects of letting any part of the premises that could be spared as shops or offices must be exceptionally good, a fact that is certainly well known to those who are now proposing to pay an enhanced but, as we believe, inadequate price for the premises. The committee, however, seems bent upon a sale and an alternative scheme of any kind receives no serious consideration from its members. We should like to know the reason. We are perfectly willing to believe that the motives of the committee are based purely on a desire to improve the welfare of the Royal Orthopædic Hospital and we deplore the insinuations that have been made to the contrary as stupid and unjustifiable. But granted the excellence of the motives yet to an impartial eye the improvement that should accrue upon such action is obscure; and, together with the minority who oppose the sale, we ask the simple question: Why is it necessary to sell the site? There can be nothing intrinsically wrong in the site for it is one which keeps the institution in the public eye. If it is the building which is radically vicious, why in the first place spend a large sum of money repairing it? And in the second place, why not rebuild on the old site? Lastly, if satisfactory reasons are forthcoming why the site must be sold every effort should be made in the interests of the charity to get the largest possible price. At least if it must be sold let the site be put up for public auction and the market be fairly gauged.

We have before us as we write a valuation of the site made within the last month by a firm of estate agents competent to give an opinion upon the matter. After saying, *inter alia*, that "properties in these highly favoured positions, being seldom in the market, are increasing in value to an incredible extent," the estate agents categorically declare that £40,600 is the wrong price for the freehold, and that a 99 years' lease of the ground at £1400 a year, with an option to purchase for £40,600 in three years' time should not be granted. These, we learn, are the proposed terms of sale. The agents give their reason for believing that the site should realise at the present moment at least £7000 more, while they state that far better terms could be obtained in three or four years' time. We find their views convincing in the absence of any explanation why immediate sale of the site is compulsory. And if the mere facts of the situation at the Royal Orthopædic Hospital call for explanation a closer examination into the history of the proposed sale leaves the inquirer still more in doubt as to the standpoint of the committee. The sale of the site of the hospital was first proposed by a committee in 1899 and that committee lost its position of authority on this very point. It was ousted largely, we believe, through the efforts of the present chairman who was elected, it was understood, in maintenance of a no-sale policy. Yet before long the new chairman and his supporters are found furthering the designs of their ejected predecessors and even outdoing them in their eagerness to sell the site of the hospital. There is no reason whatever why a man or a committee should not change in mind, but when the financial affairs of a public charity are concerned the reasons for recanting should be forthcoming willingly.

Annotations.

"Ne quid nimis."

THE ENDOWMENT OF HIGHER EDUCATION.

THE appeal of University College, London, for a million pounds sterling has drawn attention to the very urgent need which exists for the endowment of higher education in Great Britain. Under certain circumstances elementary teaching may be self-supporting, the payments of the scholars providing sufficient to defray the cost of the school premises, the books and materials needed, and the remuneration of the teachers. Yet it is being recognised that a very large part of even the elementary education of the country must be assisted by the State, or to a great extent supported by voluntary contributions. If this is so where elementary education is in question, where the necessary acquirements of the teachers and the equipment for teaching are not of a high standard, much more must it be the case where higher education is in question. It has been long known that the fees which students are able and willing to pay for instruction are totally inadequate to reimburse the teaching institutions for the expenses incurred. It has been estimated that the average cost in French and German universities of educating a student amounts to between £50 and £70 a year and the expense in this country would surely not be less. Yet the annual educational fees required from a student in most British universities and institutions of university rank do not exceed £20 or £30. It is clear that the difference between these amounts must be supplied by endowment. Moreover, the recent developments in science have greatly increased the expense of the equipment necessary for efficient teaching, and the development of many sciences makes it no longer desirable or even possible for one lecturer to deal with all the branches of one science. The scientific method, too, has invaded departments of study which at one time were dealt with empirically, and thus new forms of applied science have come into being. Each of these branches of learning must be taught by professors and lecturers who have devoted special attention to the subject. For these adequate remuneration must be provided or it will be impossible to obtain the best men. £300 a year is surely little enough to attach to any lectureship and £800 would be a more desirable stipend. Further, in most subjects in addition to the lecturer there should be assistant lecturers and demonstrators are also equally essential. A most important branch of all scientific institutions is research work, for to neglect to aid in the advance of a science is to drop behind. No institution of university rank fulfils its destiny if it fails to provide facilities for research work for the lecturer himself, for his assistants, and for the senior students. A great item is the cost of fitting up modern laboratories, and more expensive still is their maintenance. In this country the need for the endowment of higher education was formerly fully appreciated and the Universities of Oxford and Cambridge are noble monuments of bygone munificence. Even in recent years there have not been wanting instances of the endowment of higher education—among them may be specially mentioned Mason's College, Birmingham—but other countries have done far more. In our own times the University of California has been endowed with £9,000,000 sterling; the University of Chicago has received £2,500,000 and the Johns Hopkins

University £1,400,000. On the continent of Europe we find the State recognising the value and the needs of a University education and contributing with no niggardly hand to the expenses of the universities. In Germany there are 22 universities and these receive more than £700,000 a year from the State, and in France a like sum is granted to its 16 universities. In this country it is almost hopeless to expect substantial help from the Government for the endowment or support of higher education, and we must therefore look to private individuals for the funds to establish and to maintain institutions of university rank. We can imagine no more beneficent object for the liberality of the wealthy. Efficient higher education is one of the most essential elements of our national life. University College, London, has done good work in the past, and especially worthy of mention and of interest to all medical men is its medical faculty with its long list of distinguished alumni. Its funds are, however, entirely insufficient for the due prosecution of its work, and its probable incorporation in the University of London makes it more necessary than ever that its endowment should be greatly increased. A million pounds sterling is a large sum of money, but unfortunately the present low rate of interest necessitates the allocation of a far larger amount of capital than would at one time have been required to produce the income urgently needed. Adequately endowed, University College, London, should prove of the greatest value in making the new University of London a real university in the best sense of that word.

WEEK-ENDS.

To point to the hurry and stress of modern town life as the cause of half the ills to which flesh to-day is heir has become almost a commonplace in etiological diagnosis. The old-fashioned, so to speak time-honoured, complaints might almost excite a medical man's pity, so much do they seem to be crowded out by those active widespread young fellows, neuritis, neurasthenia, and a whole young family of nervous illnesses, the offspring of the strained existence of to-day. A chain is as strong as its weakest link and to-day it appears that the nervous system is the weak link of the organism. The weakness is not natural. It is acquired because the strain upon this link is so often almost constant and out of proportion to the wearing power, so to speak, of the material. Whether as generations advance individual nervous systems will more easily bear the labours asked from them or not, at any rate it may fairly be assumed that in the early days of any new style of life the generations born under an old *régime* have, to speak colloquially, the worst of it. Their children cope more easily with the new necessities. They are earlier confronted with them and new arrangements which perplexed and worried their parents become habits easily borne and therefore not to be reckoned among the trying elements of existence. Thus we may imagine future generations perfectly calm among a hundred telephones and sleeping sweetly though air-ships whizz among countless electric wires over their heads and a perpetual night traffic of motor-cars hurtles past their bedroom windows. As yet, it must be sorrowfully confessed, our nervous systems are not so callous. Some of us still start at the telephone-ring and find the irregularities of the instrument a source of irritation and worry. Many of us are actually nervous at the sudden appearance of a motor-car round the wrong side of a London street-corner. The result of countless repetitions of these trials, small though they may be singly, is not to be lightly estimated. It is not only in the case of infectious diseases that a virgin soil affords the most favourable condition for a fertile growth and spread of the morbid influence. Our readers are familiar with the ravages perpetrated by such diseases as syphilis and small-pox when they fall for the first time upon a savage population. It is not straining an analogy too much to compare with these the effect upon civilised populations of large cities of the manifold stresses, hurries, worries, and anxieties of modern existence in its latest form. The savage communities always knew disease but syphilis and small-pox were new forms. Town populations always knew worry and excitement—electric communication and rapid locomotion provide their new forms. Fortunately, the very causes of nerve exhaustion, so far a improved rapidity of locomotion may be counted one o them, provide one important counteracting feature of town life at the present day. We are alluding to the facility with which those whose week-days are spent in city toil may spend the seventh in breathing the fresh air and beholding the innocent joys of the rustic. To the hard-working Londoner the value of the week-end properly used is hard to over-estimate. From the eager broker and worried business man to the stifled seamstress and toiling artisan there are few who cannot find further or nearer from the metropolis some fresh and open spot where they may replace the evil atmosphere of the office or the factory. Without trains, electric tramways, and motor-cars such a wholesome change of scenery and surroundings would be scarcely possible in the limited time available. We do not wish to underrate for a moment the value of parks and open spaces—the "city's lungs" as such places have been aptly called. For many these afford the only possibility of a Sunday in at any rate comparatively fresh air. Those large numbers, though, who habitually find the Sabbath's rest in a day's wholesome exercise at some little distance from their work-a-day centre may spare a moment from the usual condemnatory attitude towards the bustle, rush, and clatter of up-to-date locomotion to bless the means which enable them so profitably to enjoy that day which a far-seeing design has allotted to the recuperation of striving Christianity.

OLD BELIEFS CONCERNING TOBACCO.

THE belief that tobacco-smoke is a disinfectant has long been popularly held and THE LANCET has been lately invited by the *Daily Chronicle* to "spare a moment from the pursuit of germs" to speak upon the point. In doing so we are not departing from that which our excellent contemporary holds to be our permanent engagement, for the question has much to do with germs, though the classic experiments with tobacco-smoke and cultures of bacteria prove little. As long ago as 1888 Dr. Paul Tassinari of Pisa subjected the germs of various deadly diseases (such as anthrax, cholera, and typhus fever) to the action of dense clouds of imprisoned tobacco-smoke during periods of 100 to 150 hour and he came to the conclusion that in most cases, and especially when large cigars had been employed as generators, the development of pathogenic bacteria was either partially or wholly arrested. But nobody retains smoke in his mouth for 100 hours at a time! An occasional pipe, indeed, scarcely counts in comparison with Dr. Tassinari's intense soaking process. Besides, under the conditions imposed by the Italian investigator would not the smoke of coal or wood produce the same results as that of cigars? It is recorded, says the *Daily Chronicle*, that during the Great Plague children were told to smoke in their schoolrooms. The idea was probably borrowed from the custom of the buriers of the dead on their way, in charge of dead-carts, to Holywell Mount. We read in "A Brief Abstract of the Virtues of the American Tobacco Plant," published in 1783, that at first these persons only used tobacco as a deodoriser, "little thinking that what they used for momentary relief would prove a constant preventative. When the Plague was happily stayed, the Virtues of Tobacco began to be investigated, it was found that

those persons who plentifully used it, either in smoking or snuffing, had most wonderfully escaped the dire contagion; for though they visited the chambers of the sick, attended the funerals of cartloads at a time, they unexpectedly avoided the infection." The writer even goes so far as to advance the theory that since Europe took to smoking epidemics had greatly decreased and we find him stating the belief that dealers in tobacco were secure from plague-infection. Yet he can assign no reason why tobacco should prove so valuable as a disinfectant except in so far as it fortifies the head against "exhalations." Workmen in tobacco factories are often cited as being immune from cholera and other epidemics. It is interesting to trace this belief back. Abroad it probably received its first impetus in Toulouse, where shortly before the Revolution the workmen in the State tobacco factory are said to have remained immune during a deadly epidemic of *suette* (sweating sickness). The belief, according to Parent-Duchâtelet and d'Arcet, who reported to the French Government upon the health of workers in tobacco in 1829, was probably much more ancient in that neighbourhood. It may perhaps be of the nature of folk-lore. They cite the opinion of the medical man attached to the Bordeaux State factory who writes to them expressing his belief that this local industry was a veritable blessing to a damp and foggy town. "The piquant and ammoniacal emanations arising from the tobacco qualify the air and diminish its insalubrity." Before the establishment of this factory, he goes on to remark, the poorer parts of Bordeaux had been ravaged by epidemics and contagions now unknown. The death-rate among the tobacco workmen is, he adds, very low, while very few cases of illness occur among them, although they are in general ill-lodged and clothed and even worse fed. Parent-Duchâtelet and d'Arcet seem to support the views of their correspondent, and we have no new facts to add in evidence of the value of tobacco-smoking in epidemic disease. As yet, at any rate, there is nothing authoritative to be said.

THE PURIFICATION OF RIVER WATER.

AT a meeting of the Association of Municipal and County Engineers recently held in Birmingham a paper on the Filtration of River Water was read by Mr. J. A. Jenkins, C.E. There are, he said, three methods of dealing with river water that is liable to pollution: (1) sedimentation in storage reservoirs; (2) slow filtration through sand; and (3) coagulation by the addition of chemicals with subsequent rapid filtration. The advantages of sedimentation could not, he thought, be too highly advocated. There was no doubt that a reduction in the numbers and vitality of harmful bacteria was effected by means of the bactericidal action of the harmless species working with the help of sunlight and air and considerable numbers were also got rid of during the process of precipitation. As the result of careful observation it had been found that if a high degree of bacterial efficiency was to be maintained the rate of filtration must not exceed four lineal inches per hour. This was practically two gallons per square foot per hour, or rather more than 1,000,000 gallons per acre in 24 hours. It was essential that the rate of filtration should be regular, as otherwise the bacteria caught on the upper layers of sand might be washed down into the lower coarser material or out of the filter altogether. Mr. Caink of Worcester said that sand-filtration gave the best health statistics. Several towns supplied with water from the new red sandstone, which is supposed to be very pure chemically and bacteriologically, had a typhoid fever case-rate of from 150 to 200 per 100,000 of population, while others supplied with river water receiving sewage pollution, when effectively filtered in an adequate area, even without sedimentation, had typhoid fever case-rates varying from 20 to 25 per 100,000 of population. With reference to the foregoing, the views entertained by the people of Egypt on the subject of potable water may be of interest. Nile water, they say, should never be filtered. Not only does the mud it contains add to its nourishing qualities but it also makes it wholesome. Even educated Egyptians, some of them members of the medical profession, sustain this theory and endeavour to justify it scientifically. According to their contention every human being admits innumerable microbes into his system every moment of his life. The majority are probably innocuous but unquestionably some are more or less deadly. Now it is well known that microbes are continually engaged in internecine war but nature has so adjusted the strength of the combatants that the net result for their human host is health. If, however, in a purblind attempt to improve on nature, that host should be foolish enough to meddle with her far-seeing arrangements he will inevitably disturb the equilibrium of the microscopic belligerents and end by doing himself an injury. Specious reasoning of this calibre is proudly advanced as unanswerable by the possessors of a little learning; but when they are asked to account for the fact that since the introduction of modern sanitation the duration of life has sensibly increased and, a still more telling argument, that the time lost by sickness has greatly diminished, it is the drinkers of shallow Pierian draughts who themselves remain dumbstricken.

THE TORBAY HOSPITAL.

DIFFICULTIES have of late arisen at the Torbay Hospital in reference to the tenure of office of the medical staff and the method of electing its members. The following are the main facts of the case as far as the matter has gone at present. At the annual meeting of the governors of the Torbay Hospital in February, 1901, the rule relating to the election of the honorary medical staff was, at the instance of the weekly board, altered so as to make the election annual, though some members of the staff protested at the time against the alteration. The staff are elected by a special board consisting of the weekly board (14 members) and the honorary medical staff (eight members). It was pointed out at the time that the staff would not care to vote for their own election. When the special board was summoned this year to elect the staff the latter, not caring to vote for themselves, did not attend the meeting. There were nine vacancies and the honorary secretary handed round ballot-papers containing the name of each member of the staff, with ruled columns opposite, the one headed "For" and the other "Against." In the case of two of the staff more votes were given "against" than "for." The chairman accordingly ruled that these two were not elected. Advertisements were then inserted in the newspapers asking for candidates for the vacancies. In the meantime the two rejected members of the staff called a meeting of the local profession, which was attended by practically all its practising members, and a motion was unanimously carried pledging all the members not to apply for the vacancies until the annual rule had been rescinded. When the board met to elect there were no candidates. A special meeting of the governors was then held on March 21st to rescind the new rule and substitute for it practically the old rule. The chairman allowed no amendments to be put. Eventually a motion was carried adjourning the meeting for a month in order that a conference might be held between 14 members of the Torquay Medical Society and the weekly board with a view to settle their differences. The Torquay Medical Society is composed of nearly every registered practitioner in Torquay, together with many from the surrounding districts. The society met and chose as its representatives 14 of its members who practised in Torquay and who were in no way

connected with the hospital but nearly all of whom had held staff appointments at various hospitals. At the conference held on April 14th a motion was passed rescinding the new rule and substituting practically the old rule, "adding a rider that its action should be retrospective," hoping that the weekly board by accepting this rider would not be reduced to the confession that their rejection of the two medical men was illegal: (1) because of their surprising use of unauthorised ballot-papers; and (2) because the election of the medical staff had formerly held good till they reached the age of 60 years. The conference was also informed that the medical society would not uphold any member of the staff against whom any charge of incompetency or inattention to duties had been proved to the satisfaction of the special board. The hospital had already a very good rule for dismissing such of its staff. At the adjourned meeting of the governors held on April 21st the chairman of the conference read the resolution passed on April 14th which was then moved as an amendment, but the chairman of the meeting, Mr. W. Kitson, one of the vice-presidents of the hospital, refused to allow it or any other amendment. The honorary secretary had written resigning his office and several members of the weekly board then also resigned. The motion repealing the new rule and substituting what was substantially the old rule was then put by the chairman who made a fervent appeal to every governor to vote against it. The motion was, however, carried by 47 votes to 26. The new members of the weekly board will have to be co-opted by the old remaining members and presumably a new special board will be called to elect to the vacancies on the staff, or to declare that the recent rejections were illegal and that no vacancies exist. The election or re-election of the medical staff of a hospital every year is a bad system of conducting affairs. The appointment of a medical officer to a hospital should be permanent up to, say, the age of 65 years, subject, of course, to the chances of dismissal in cases of proved incompetency or misconduct.

POISONOUS PROPRIETARY MEDICINES.

A FLEET-STREET druggist gave evidence recently at an inquest that he had been in the habit of selling over his counter to such as might ask for it a "patent medicine" known as "Bromidia" which he now found to contain Indian hemp, bromide of potassium, sodium bromide, and chloral hydrate. The occasion for his making inquiry into the nature of a mixture which he had been in the habit of selling without labeling as poison arose out of the death of a barrister who had been his regular customer, and had frequently bought "Bromidia" from him. This gentleman, who was stated to have suffered from insomnia, purchased a four-ounce bottle of "Bromidia" at nine in the morning, and was found in the afternoon of the same day in his chair at his chambers dead, with the bottle and a tumbler beside him. We believe that no evidence indicated the amount of the compound taken by the deceased, but it was stated before the coroner that the four-ounce bottle contained enough to kill several men. The bottle was not labeled "Poison" and did not bear the vendor's address. The jury found a verdict of "Death by misadventure," adding a rider that further restrictions should be placed upon the sale of such preparations as "Bromidia." How long are such representations by juries to be made and to go unheeded? How often are lives to be sacrificed before the law regulating the sale of poisonous proprietary remedies is amended? The druggist in this case in giving evidence said that the bottle of "Bromidia" when sold bore his name and address, but the label of "Poison" had not been added as he had no knowledge of the contents of the mixture. We do not quite understand his evidence. Possibly he did not know what he was selling, but at least he must have known that it was poison, for we are informed by the proprietors of "Bromidia," and have ascertained for ourselves that the statement is accurate, that every bottle supplied to a druggist bears a label saying that if it is sold to the public, instead of being used in making up the prescriptions of medical men, a stamp in accordance with the price of the article and the word "POISON" must be affixed. The composition of "Bromidia" is perfectly well known to all medical men, and when used in response to medical prescriptions the formula is a valuable one in many conditions. But when sold to the public "Bromidia" becomes, like all poisonous proprietary preparations, a source of danger—and how serious a source these preparations may be we have often pointed out when discussing the Medicines Stamp Act.

THE CASE OF DR. W. T. LAW.

IN another column will be found a letter from Dr. Richard Paramore calling the attention of the profession to a meeting which will be held on May 9th with a view to helping Dr. W. T. Law. His hard case will be fresh in the minds of our readers, and we have already expressed our opinion of it in our issue of March 8th, p. 680. Dr. Paramore, we see, quotes some portion of what we then said as an argument in support of his appeal to Dr. Law's professional brethren, and we, for our part, can do no better for the cause than quote another portion—namely, "We endorse the statement by the jury that the action ought never to have been brought, and still more forcibly the stricture passed by Mr. Justice Grantham on the unfairness of the way in which the plaintiff's case was conducted." Owing to the poverty of the plaintiff Dr. Law is saddled with the payment of heavy costs. At any moment anyone of us may find himself in a like position and we therefore hope that not only will the leaders of the medical profession subscribe their guineas, but that the rank-and-file thereof will send their shillings. Sympathy is a great thing, but, as the Apostle James remarked, "If a brother or sister be naked, and destitute of daily food, and one of you say unto them, Depart in peace, be ye warmed and filled; notwithstanding ye give them not those things which are needful to the body; what doth it profit?" So let us show our sympathy in a practical way. And in particular we hope that the subscriptions will flow into the fund from the profession at large, for the matter is one of vital importance to them and they should recognise it.

SIMULTANEOUS INTRA-UTERINE AND EXTRA-UTERINE PREGNANCY.

SIMULTANEOUS intra-uterine and extra-uterine pregnancy is one of the rarest and most puzzling conditions which may confront the practitioner. A case is recorded by Dr. H. P. Perkins in the *Boston Medical and Surgical Journal* of March 20th which well illustrates the difficulty of diagnosis. The patient was a woman, aged 26 years, who had been married five years but had been pregnant only once, when early abortion took place. A menstrual period which was expected on Nov. 30th was missed. Two weeks later there was slight pain. On Dec. 21st whilst riding in a street car she felt sharp darting pains in the right side of the abdomen. She went home in a cab and took to bed. On Dec. 24th, when she was seen by Dr. Perkins, she complained only of a slight sense of fulness and pressure in the right side of the abdomen. This she attributed to appendicitis, of which she had had two mild attacks. The temperature was 100·6° F. and the pulse was 110. The right iliac region was tender and was slightly dull on percussion. The uterus was a little high, moveable, and enlarged. On the right was an ill-defined, boggy mass, apparently closely connected with the uterus, extending outwards to the pelvic brim, and exquisitely tender. Pain was caused by moving the uterus upwards

or to the left. It was thought that the boggy feeling in the vaginal vault was due to a hæmatocele, the cause of which could not be determined. Most of the symptoms of extra-uterine pregnancy were absent. Immediate operation was proposed but declined by the patient. On Dec. 28th the temperature was 100° and the pain was more marked. The patient consented to an operation which was performed on the 29th. On opening the abdomen from 20 to 30 ounces of fluid blood and clots escaped. A mass of adherent tissue was broken through and the bleeding point was found in the right Fallopian tube, which was enlarged and ruptured close to the uterus. The broad ligament was infiltrated with blood. The ovary was considerably enlarged and was cystic. The portion of tube involved was less than half an inch from the uterus. Care was taken not to disturb the uterus which presented the appearance of an early pregnancy, but owing to the friability of the tissues the ligature securing the tube had to be placed practically in uterine tissue. The vermiform appendix, which was adherent to the ovary, swollen, and congested, was removed. The patient rallied promptly from the operation. On the sixth day pains and hæmorrhage from the vagina began. Next day the uterus was dilated and curetted and the remains of an eight weeks' ovum were removed. Recovery ensued.

HEAT AREAS.

THE relations of the body to heat are numerous and various. From the time of Hunter experimenters have occupied themselves with the temperature of the body and its several parts in man and animals. Hunter fixed the average temperature of the human body at 98·9° F., which is in close accordance with the results of all recent observers. Davy showed that whether man was examined in the tropics or in cold countries little difference could be observed. W. Ogle, Jurgensen, and others in experiments extending over many months proved that there were slight but constant daily and seasonal variations amounting to one degree or two degrees. **Wunderlich** applied similar observations to the diagnosis and prognosis of disease. Numerous observers have taken infinite pains and trouble to determine the temperature of different regions of the body. Much valuable information in regard to the temperature of the body has thus been accumulating for many years. All these investigations, however, were concerned with the production or generation of heat in the body and with its loss by radiation, by evaporation, and by conduction. It is only comparatively recently and chiefly through the investigations of Goldschneider that some knowledge has been gained of the existence of nerve-endings in the skin which are especially adapted to receive impressions of temperature. Most of the recent text-books on physiology have a drawing showing that certain small areas are particularly sensitive to variations of temperature. These areas presumably represent the distribution of the branches of nerves of which some respond to heat stimuli, others react more strongly to cold, whilst other intervening areas are indifferent to heat and cold but receive and conduct impressions of pain. Goldschneider and Blix have tested nearly the whole surface of the body and have shown the topography of these nerves. The subject has been again taken up by Elemér Veress, an assistant in the Royal Hungarian Franz-Joseph University of Kolozsvár. He found that such special difficulties presented themselves in testing the areas of the skin that are sensitive to cold that he soon gave up the attempt and occupied himself instead with testing the sensitiveness to heat of the various skin areas which he found to be much more easily managed. In order to carry out his experiments systematically he devised a small instrument of brass, coated with nickel, which he terms a thermæsthesiometer. It is of conical form, ending in a flat surface six millimetres—that is, about a quarter of an inch—in diameter, and is applied to the skin. The interior of the brass cone is divided by a vertical septum which extends nearly to the apex and has, like a perfusion cannula, an adit and an exit tube soldered into its upper part. A current of water of various temperatures can then enter on the one side and pass out on the other after flowing beneath the edge of the vertical septum and thus coming into close proximity with the skin. A small thermometer carefully graduated to tenths of a degree Centigrade is inserted into the instrument, the bulb of which is carried to the apex in contact with the cutaneous surface. The temperature of the water traversing the thermæsthesiometer was regulated automatically by an ingenious arrangement. The temperature of the water applied to determine the localities of the heat spots was about 102° F. When the temperature was gradually raised the sensation of heat passed into one of pain and the rise in some instances to produce this effect was in some instances 20° F. or more, in others much less. Much care appears to have been taken by the observer to eliminate sources of error such as moistness of the skin and after-impressions due to hyperæmia. He sums up the results of his numerous experiments on himself in the following propositions: The two sides of the body do not appear to be equally sensitive to differences of temperature, the left side, taking the mean of many experiments, being more sensitive than the right. The middle region of the trunk is less sensitive to heat than the flanks, but the trunk as a whole is more sensitive than the extremities. The sensitiveness to heat-impressions in the extremities diminishes from the proximal to the distal parts, yet not regularly, for there may be areas in the distal parts that are more sensitive than in any proximal part of the limb. The lateral regions of the extremities are more sensitive to heat than those of the median surface. The pure ideal sensitiveness to heat depends exclusively upon the richness of the innervation. Looking at the subject from a practical point of view the degree of sensitiveness is partly dependent upon the thickness of the epidermis and especially of the horny layer, but also upon habit; as a result of these circumstances the precise degree of sensitiveness for each part or region of the body cannot be very exactly determined.

THE DISTRIBUTION OF PLAGUE.

As regards Egypt, during the week ending April 13th, 23 cases of plague and 13 deaths from the disease have been reported throughout Egypt. 1 case was reported from Kom-el-Nur; 10 cases and 6 deaths from Deschneh (2 of the latter occurred out of hospital); 3 cases and 1 death out of hospital from small *ezbehs* near Benha; 1 case and 1 death from Sheblanga; and 8 cases and 5 deaths, 3 of which occurred out of hospital, from Bedouin encampments near Kafr-el-Rabieh, in the district of Tala Menoufieh province. The infection in the cases at Kafr-el-Rabieh has been distinctly proved to have been carried there by Bedouins who were turned out of their huts at Korachieh. The following shows the distribution of plague throughout Egypt during the week ending April 20th:—Alexandria, 2 cases and 1 death; Mit-Ghamr (district), 1 case and 1 death; Mit-Samanoud (district) 5 cases and 2 deaths; Deschneh, 10 cases and 9 deaths; Benha, 1 case and 1 death; Tala (district), 11 cases and 4 deaths; and Tantah, 1 case and 1 death. An outbreak of the disease has occurred among Bedouins living near the village of Deirs in the Mit-Samanoud merkaz. The disease near Kafr-el-Rabieh in the merkaz of Tala remains confined to the Bedouins in the different camps at some distance from the town. As will be seen, two cases have occurred during the week at Alexandria, a town which has been free from the disease since Feb. 17th, 1902. As regards the

Mauritius, a telegram from the Governor received at the Colonial Office on April 25th states that there were no cases of plague for the week ending April 24th. On the principle that "forewarned is forearmed" the medical officer of health of Bristol, Dr. D. S. Davies, has issued a circular to medical practitioners in his district pointing out that though at present there is no known case of plague existing in these islands, yet the possibility of its introduction, especially into seaport towns, is ever present. The circular draws attention to the need for regarding with suspicion any case of pneumonia among sailors recently arrived from suspected ports or among dockyard labourers engaged in unloading cargoes from such ports. Any case also presenting the smyptoms of fever with adenitis after possible exposure to infection should be viewed with suspicion. The circular concludes by stating that any communication from a medical practitioner to the medical officer of health with a view to securing a bacteriological diagnosis will receive attention.

HOLIDAYS FOR POOR CHILDREN.

THE Ragged School Union and Shaftesbury Society, which was founded nearly 60 years ago, sent last year some 6000 children from the unhealthy and crowded back streets of the metropolis to the country or the seaside for a fortnight or more. This year the society wishes to repeat this useful work and its appeal for funds will be, we trust, readily responded to by those who are able to help. One child can be sent away for a fortnight's holiday for the sum of 10*s.* and it is difficult to estimate the value, both physical and mental, of a fortnight's holiday in the pure air of the country to the children of the slums. Donations should be sent to the secretary, 32, John-street, Theobald's-road, London, W.C. By the way, the question of the risk to the country districts of spreading small-pox among them through the medium of the little holiday visitors, though small, must not be disregarded. We trust that the society will take every precaution in the matter.

THE OBSTETRICIAN—PHYSICIAN OR SURGEON?

IN our issue of April 5th, p. 979, we referred to the troubles which have arisen at the Lincoln County Hospital concerning the action of the physician in charge of gynæcological cases performing operations such as abdominal sections. The matter was referred to the weekly board and that body decided that the gynæcologist in question was within his right in performing such operations as we have mentioned. The members of the staff who are also members of the weekly board attended but did not vote. The matter was then referred to the quarterly board of governors which met on April 10th and by 16 votes to 14 it was resolved that the decision of the weekly board should stand. This is but a small majority to decide a question which has obviously given rise to a great deal of heat and one upon which five-sixths of the medical staff appear to be in unanimous opposition to the remaining sixth. Moreover, the chairman of the quarterly board of governors is reported as saying that he considered that the members of the staff were quite right in not voting at the weekly board, "otherwise they would have been sitting as judges on their own case." But the chairman of the quarterly board of governors is also the chairman of the weekly board and the meeting of governors was called to adjudicate upon the decision of the weekly board. Therefore the chairman of the meeting of governors practically did the very thing which he praised the medical staff for not doing—namely, sat in judgment on his own case. However, the lay authorities of the hospital have decided against the majority of the staff and in our opinion the staff had better try to settle matters between themselves. It surely ought not to be difficult with the exercise of a little "sweet reasonableness." It is a thousand pities that the work of a beneficent institution such as a hospital should be impeded because the essential members of its *personnel* cannot agree upon a method of procedure.

THE BATTLE OF THE CLUBS.

ANY practitioner who is asked to take the appointment of medical officer to an association of clubs in the district of Holmfirth, Yorkshire, would do well to communicate previously either with Dr. H. Watthews or Dr. H. W. Williams, both of Holmfirth.

THE PREVALENCE OF SMALL-POX.

THE returns of small-pox in London for the past week show the following figures:—On Saturday, April 26th, there were 39 cases notified and removed; on Sunday, the 27th, there were 27 fresh cases; on Monday, the 28th, there were 31 fresh cases; on Tuesday, the 29th, there were 28 fresh cases; and on Wednesday, the 30th, there were 39 fresh cases. In the county of Essex for the week ending April 26th, there were notified 63 cases, making a total of 890 cases throughout the county from Jan. 1st.

THE ST. JOHN AMBULANCE BRIGADE.

WE understand that an association of honorary surgeons of the St. John Ambulance Brigade has been formed, having as its objects: (1) to further civil ambulance work; (2) to aid and advance the interests of the Order of St. John of Jerusalem; (3) to watch the interests of the honorary surgeons; and (4) to promote social intercourse among its members. Circular letters have been sent to all the honorary surgeons throughout England and Wales, and any of these gentlemen who may not have received them are requested to communicate with the honorary secretary, Dr. James J. Marsh, 104, Sloane-street, London, S.W. The first annual meeting will be held at the Hotel Cecil on June 25th, and will be immediately followed by the first annual dinner. The present annual subscription is 2*s.* 6*d.*

THE MANCHESTER AND SALFORD HEALTH ASSOCIATION.

THE jubilee of the Manchester and Salford Health Association falls in the present year and has been celebrated by a congress on sanitary reform which was opened in the Manchester Town Hall on April 24th. The Lord Mayor in welcoming the members on their arrival said that theirs was the oldest sanitary association in the country and that it had given direction and encouragement to the efforts of other towns and societies. The presidential address was delivered by the Bishop of Manchester (the Rev. Dr. Moorhouse) who discussed at considerable length the death-rates of Manchester and Salford, comparing them with those of other places and emphasising the importance of sanitary surroundings as a factor in the moral and physical improvement of the population. At the close of the Bishop's discourse the chair was taken by Professor J. Dixon Mann and the business of the conference commenced with an address delivered by Dr. Arthur Ransome on the history of the association, the preludes to the formation of which were the publication of the report of the Health of Towns Commission in 1842 and the revelations made by the returns of the Registrar-General with respect to the great mortality of most large towns. Sir James Crichton Browne, whom one of the speakers styled the "Chrysostom of the profession," then introduced the subject of light and sanitation in a speech remarkable for its scientific breadth, sustained eloquence, and wealth of impressive phraseology. Naturally enough, he was

severe in his condemnation of the window tax which, he said, was instituted in 1696 and continued in force till 1851. It had blighted domestic architecture for 150 years, it had undermined in some degree the physical vigour of the people, and it had accustomed them to dingy dwellings. Sanitary laws were similarly infringed by the modern practice of building houses of inordinate height and by the production of immense volumes of smoke in factories and in various industrial processes. Papers were then read by Dr. Arthur Newsholme on Vital Statistics and by Mr. Horsfall on the Housing Question.

PLAGUE AND RATS ON SHIPBOARD.

A VALUABLE contribution to our knowledge of the transmission and diffusion of plague is provided by the circumstances of an outbreak on board the s.s. *Antillian*. This vessel, a troopship of 3686 tons, left Capetown with a clean bill of health on Feb. 1st, 1901, and entered Sydney Harbour on March 2nd, having no cargo but in shingle ballast and completely fitted for carrying mounted troops; there was a crew of 65 persons in all but there were no passengers and no surgeon. The health officer of the port was informed that all hands were well except a sailor who was thought to be suffering from pleurisy. It was known that plague had occurred at Capetown subsequently to the departure of the *Antillian* and an examination of the patient showed that he suffered from that disease. He was therefore removed to the hospital, where he died on March 3rd, and the vessel was sent to the maritime quarantine station; at the same time inoculation was offered to all hands, but only ten (mostly officers) accepted. During the night of March 11th–12th a man who was a storekeeper on board fell ill with a typical attack of plague from which he was pronounced convalescent on the 31st. The bodies of two rats which had been picked up dead on the vessel on March 4th were found to be teeming with plague bacilli. The captain said that there were not many rats on board, but that on Feb. 22nd, the day of the departure of the vessel from Albany, Western Australia, where it had been for 24 hours, 15 carcasses were discovered. At Albany the vessel anchored in the stream and received coal from a lighter which came alongside. Plague broke out immediately afterwards in Western Australia, but there was never any suspicion of the disease in Albany among either the human population or the rats; most of the cases occurred in Perth, 245 miles from Albany but connected with it by rail. At Sydney the *Antillian* was four times fumigated with sulphur, more than three-quarters of a ton having been burnt. The store-rooms, having probably been the resort of rats, were specially treated; they were at different times twice sprayed with corrosive sublimate solution (one in 500) by means of Geneste-Hirscher sprays and were separately fumigated. After repeated searches only 83 dead rats were found and the vessel was released for service on March 15th. In a report on this case made to the State Treasurer Dr. J. Ashburton Thompson, the President of the New South Wales Board of Health, draws attention to the circumstance that plague communicated to the rats which infested a vessel of 3686 tons to the number of about 100 continued among them for 29 days and yet at the end of that term it had killed only a minority of them. From this it may be inferred that length of voyage within the limits common with steamships at the present day does not avoid the risk of infection run by clean ports which are in communication by sea with infected ports. Another fact of even greater practical importance is that a ship may become infected at a port (in the present instance, Capetown) which lay under no suspicion of plague at the time the ship left. Under ordinary circumstances communication of such a ship with any healthy port at which it arrived would be unrestricted, and there is reason to believe that the epidemic at Sydney in 1900 originated in this way.

OVERCROWDED TRAINS.

THE recent disaster to a workmen's train on the Great Eastern Railway at Hackney Downs Junction, having as its result the death of several persons and the maiming and mutilation of others, will serve a useful purpose if it calls public attention effectively to the question of overcrowding railway-carriages. No doubt the inquiry which will follow into the causes of the accident will show to what extent, if any, overcrowding may have been responsible for what happened, and also to what extent, if any, it may have aggravated the injuries and suffering inseparable from so serious an occurrence to a passenger train. The accidents, however, which take place in consequence of the number of passengers travelling by train exceeding altogether the accommodation provided by railway companies, without taking into account such serious catastrophes as that to which we are referring, are very numerous. Hundreds of men and women in and round the metropolis daily risk life and limb in the struggle to obtain standing room in trains that will convey them to or from their work. Should they be successful in entering a compartment they have to travel, perhaps for an hour or two daily, in an atmosphere of the foulest description. The justification of such overcrowding of the train is, presumably, the contention that the workmen's train could not be run without it, except at a loss. So much, however, has been done, which to our fathers would have seemed ruinous and impossible, to improve the conditions of travelling for the humbler classes, that we cannot readily admit the want of accommodation in the workmen's train to be a necessity for which no remedy is possible. Our methods of locomotion are just now in a violently transitional state, especially in, and in the vicinity of, crowded centres. Hopeful people, with Mr. H. G. Wells as their prophet, believe that order will soon be evolved from chaos. If this be so, order will be attained by the ruthless confiscation of all machinery found wanting in the ameliorated condition of things. Our railway companies should have it before their eyes that competition is at last putting them on their trial.

THE annual meeting and May dinner of the Aberdeen University Club, London, will be held at the Trocadéro Restaurant on Wednesday, May 21st, at 7 P.M. The chair will be taken by Sir John Anderson, K.C.M.G., and those intending to be present should communicate with the honorary secretaries, Dr. James Galloway and Mr. J. Malcolm Bulloch, at 54, Harley-street, W.

THE Prince of Wales, as President of King Edward's Hospital Fund for London, has received from Mrs. Samuel Lewis the first quarterly instalment of the munificent annual subscription of £10,000 which she will give to the fund during her life. This represents the interest on the amount bequeathed to the fund by her husband, in which sum she has a life interest.

THE May dinner of the Edinburgh University Club of London will be held at the Criterion Restaurant on Wednesday, May 7th, at 7.30 P.M., under the chairmanship of His Grace the Duke of Argyll, K.T.

THE governing body of the Jenner Institute of Preventive Medicine has appointed Major Ronald Ross, F.R.S., late I.M.S., to be head of a new department in the Institute at Chelsea.

THE annual general meeting of the Medical Defence Union will be held on Thursday, May 15th, at 5 P.M., at 4,

Trafalgar-square, London, W.C., to receive the annual report of the council and the statement of accounts and to transact other business of interest to the union and to the profession at large.

A MEETING of the Anatomical Society of Great Britain and Ireland will be held at the Charing Cross Hospital Medical School, on Friday, May 9th, at 4 P.M.

LORD CROMER'S ANNUAL REPORT ON EGYPT.

LORD CROMER'S annual report on the finances, administration, and condition of Egypt is, as usual, full of interesting and clearly expressed information. Having dealt exhaustively with the affairs of the whole country (exclusive of the Soudan) under 82 distinct headings, his lordship in conclusion feels justified in placing on record two extremely satisfactory deductions: (1) that "the past year was one of steady and normal progress"; and (2) that "in Egypt proper it may be said that the foundations on which the well-being and the material prosperity of a civilised community should rest have been laid." To anyone who was acquainted with Egypt in the bad old times before the British occupation 20 years ago the transformation which has taken place must appear to be well-nigh as miraculous as though our Consul-General had had the control of Aladdin's lamp. It would be impossible to describe the universal betterment more tersely and adequately than Lord Cromer himself does; we therefore append his *ipsissima verba*:—

> It is, of course, obvious that in every department of the State further improvements are both necessary and practicable. But these are, for the most part, matters of administrative detail. So far, at all events, as the purely Egyptian portion of the administration is concerned no radical change of any kind appears to be required. The fiscal system has been placed on a sound footing. The principal irrigation works are either completed or are approaching completion. Means of locomotion, both by rail and road, have been improved and extended. The institution of slavery is virtually defunct. The corvée has been practically abolished. Although both the judicial system and the organisation of the police admit of further improvement it may be said that law and order everywhere reign supreme. The courbash is no longer employed as an instrument of government. The army is efficient and well organised. The abuses which existed under the old recruiting system have been swept away. New prisons and reformatories have been built. The treatment of prisoners is in conformity with the principles generally adopted in Europe. The sick man can be nursed in a well-equipped and well-managed hospital. The lunatic is no longer treated like a wild beast. Means have been provided for enabling the peasantry to shake themselves free from the grip of the money-lenders. A very great impulse has been given to education in all its branches. In a word, all the main features of Western civilisation have been introduced with such adaptations as have been necessitated by local requirements.

Of the 82 sections into which Lord Cromer's report on Egypt proper is divided no fewer than 22 are more or less intimately concerned with medicine and sanitation. Under the heading "Medical Administration," we are told that the number of admissions to the Government hospitals continues to increase, 23,447 persons having been treated as in-patients in 1901 as against 22,572 in 1900; and also that, judging from the steady increment in fees observable every year, it is evident that the native population is beginning to appreciate the advantages of hospital treatment. At Kasr-el-Aini the income under this head has risen from £E349 in 1896 to £E1247 in 1901.

In the course of 1901 two very important modifications of administrative detail were sanctioned. Hitherto the construction and repair of buildings utilised for medical and sanitary purposes have been carried out by the Public Works Department but in future this work is to be done under the orders of the Director-General of the Sanitary Administration, who has been allowed to employ his own staff of engineers and others for the purpose. The second modification deals with the scavenging and watering service of Cairo which, with its entire staff and plant, was once more handed over to the sanitary director from Jan. 1st, 1902, the accompanying grant amounting to £E25,000.

Under the heading "Infectious Diseases" Lord Cromer writes as follows:—

> Independently of plague, 3632 cases and 682 deaths from infectious diseases were notified during 1901, against 4144 cases and 1027 deaths in 1900. Small-pox accounted for 1283 cases and 220 deaths. Cairo was comparatively free from this disease during the year, only 20 cases and four deaths occurring against 172 cases and 41 deaths in 1900. This immunity was, without doubt, due to the very thorough revaccination of a large proportion of the population during 1900. The good results of efficient vaccination in preventing the spread of small-pox cannot be better illustrated than by what took place at Port Said in 1901 when an outbreak of the disease occurred in that town.
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> The population of Port Said is 47,500, of whom 35,000 are natives and 12,500 Europeans. 174 cases and 56 deaths from small-pox were reported from this town during 1901. Of these 129 cases and 38 deaths occurred among Europeans and 45 cases and 18 deaths among natives. This enormous disproportion was, without doubt, due to the lack of vaccination among the European population. It is possible to enforce vaccination among the native population but among the European, though vaccination is compulsory by the law of the country, it is impossible to enforce it, as the Egyptian Sanitary Department has to depend on the consuls of the various countries for the notification of births in their respective colonies and these notifications are either sent with no information as to the residence of the parents or are not sent at all, so that it is impossible to trace the children and prosecute the parents in the courts if they refuse to have them vaccinated. Over 30,000 of the inhabitants of Port Said were vaccinated between January and June, 1901. After the end of June no further cases occurred.

Lord Cromer commends the above facts and figures to "those who are disposed to doubt the utility and efficacy of vaccination," and adds that small-pox, which was formerly very prevalent in the province of Assouan, especially among the Bisharin Arabs, has been almost entirely stamped out by more efficient vaccination.

With reference to diphtheria Lord Cromer writes:—

> 357 cases of diphtheria occurred in the town of Cairo during 1901, as against 210 certified during 1900. The difficulty of suppressing the ravages caused by this disease arises from the fact that many cases among the native population are not brought to the notice of the sanitary authorities until after death has taken place. In all houses infected with diphtheria and those in contact with them the prophylactic treatment by the injection of anti-diphtheritic serum has been practised on all surviving children where the parents have accepted it. In houses where this treatment has been carried out second cases of the disease have never occurred. It is regrettable that in some cases parents will not accept this treatment for their healthy children who have been more or less in contact with the infection of diphtheria, as without doubt it offers a very real protection against the disease.

It is satisfactory to find that sanitation is making some progress in the villages of Egypt as well as in the towns. During the past year 227 cemeteries were condemned and other sites were selected in lieu of them. "Very few villages now remain," adds Lord Cromer, "in which it will be necessary to change the cemeteries." The work of improving the sanitary condition of the mosques likewise continues steadily. 1179 village mosques were dealt with in 1901, but Pinching Bey, late Major R.A.M.C., Director of the Egyptian Sanitary Department, is unable to report as favourably regarding the *birkets* (ponds) which exist in the neighbourhood of nearly every village and which constitute a danger alike to human beings and to animals. Lord Cromer, however, trusts that "sooner or later it may be possible to deal with this important, but somewhat difficult, subject."

In Egypt a good and pure water-supply is one of the first of needs, for, unfortunately, the Nile—its only source—has from time immemorial been used as a main sewer. Arrangements, we are told, have been made to supply several more provincial towns with good water. Borings have also been made with success in others and the necessary steps have been taken to prevent contamination prior to delivery. At Alexandria new filter-beds are under construction but the new scheme for distribution will not be completed for three years. With the approval of Government the municipality of this seaport has recently raised the sum of £E500,000 which is to be spent on sanitation. In Cairo a system of surface-drainage for the removal of storm water has been completed at a cost of £E20,500, the work having been carried on by night as well as by day, but Lord Cromer makes no mention of the larger scheme for the complete sewerage of the city about which so much was heard a few years ago. It would probably lessen the growing dampness of Cairo if used garden and kitchen water could be removed by these new drains, but, of course, care would have to be taken to prevent the entrance of sewage matter.

Since 1895 a sum of £E21,000 has been spent on alterations and improvements in the only lunatic asylum which Egypt possesses. The accommodation is, however, entirely insufficient and a second asylum is much needed. Only 85 *hashish* patients were admitted in 1901, as against 128 in 1900, the improvement being due to the "campaign" against the importation and use of the drug which has been prosecuted with much vigour.

> The most interesting medical work at present in hand at the asylum (writes Lord Cromer) is the observation of cases of insanity due to, or accompanied by, pellagra. A record of these cases is being published in European cientific journals.

One of the last and most obstinately defended of the strongholds of corruption in Egypt was what is known as the *Wakfs*—or more properly *Owkaf*—a body of trustees charged with the administration of vast properties which from time to time have been bequeathed for the benefit of charity (including hospitals), religion, and education. In 1896 the accounts showed a deficit of no less than £E27,000 but in 1901 there was a revenue of £E245,000. During the five years the aggregate surplus amounted to £E270,000. As Harari Pasha, quoted by Lord Cromer, justly remarks, "These results are worth recording, or else the public, interested in the *wakfs*, may be led to forget the past and think the administration has always existed in its present form." In addition to the public *wakfs* there are also numerous private *wakfs* whereof the beneficiaries now receive the full amounts accruing to them. Too much praise cannot be accorded to the way in which this extremely delicate reform has been carried out. Very large sums have been saved from diversion to improper purposes without the least ruffling of Mohamedan religious feeling.

A report on the Soudan, which on this occasion has been compiled by Lord Cromer himself, is included in the publication and there is also a highly interesting memorandum on the plague in 1901 by Pinching Bey.

AN ACTUARIAL VIEW OF VACCINATION AND SMALL-POX.

ON Monday last, April 28th, at the Institute of Actuaries, Staple Inn Hall, Holborn, a paper by Mr. Arthur Francis Burridge, the secretary of the Equity and Law Life Assurance Society, was read, dealing with vaccination in a manner that is just now of particular interest to the medical profession. Mr. C. D. HIGHAM, President of the Institute of Actuaries, occupied the chair.

Mr. BURRIDGE commenced by pointing out that the Journal of the institute contained little information on vaccination, only a few brief remarks by Dr. S. H. Ward in 1860, some paragraphs in a general paper by Mr. W. H. Porter in the same year, and a paper by Dr. Sprague in 1877. Starting with the introduction of the practice of inoculation consequent on a letter sent to England by Lady Mary Wortley Montagu in 1717, he then traced the history of vaccination down to the present time, illustrating his remarks with tables and charts conclusively showing that there must be in all civilised countries some other cause in addition to sanitation which had favourably affected small-pox mortality. The conclusions arrived at in his historical *résumé* were clearly brought out. He found that the diminished mortality from small-pox in the various countries dealt with had followed vaccination legislation and that a marked difference appeared since the epidemics of 1870 and 1874 as between those countries which enforced and those which did not enforce vaccination; and further that in the only country in which revaccination was compulsory—namely, in Prussia—small-pox had been practically eradicated. As regards England and Wales the last 50 years he divided into two periods—namely, the period from 1848 to 1870 during which vaccination was compulsory though not strictly enforced, and the period 1871 onwards in which vaccination was more or less compulsory. The mortality in the first of these periods fluctuated considerably but showed on the whole a slight downward inclination. The second period opened with an epidemic and the figures for 1871–72 were abnormal. The mortality in the following year fell to a low point, and from that time it had fluctuated within much narrower limits. Next he found that the decline in mortality had principally affected children under 10 years of age, the influence being less and less felt as the higher age-groups were reached, until, for ages above 45 years the mortality from small-pox remained at the present day as heavy as it was 50 years ago. Mr. Burridge next examined the statistics of special communities and classes in which the vaccination condition was ascertainable. The tables and plotted curves dealing with the Sheffield epidemic showed, he said, the very large immunity from attack enjoyed by the vaccinated class as compared with the unvaccinated. The gradual approximation of the rates among the two classes as the groups at the higher ages were reached was strikingly shown, as was the very small percentage of fatal attacks among the vaccinated classes. The experience of armies, Mr. Burridge pointed out, formed the largest available material, where individuals were under constant supervision and where the vaccination condition was a more or less known factor, while the mere act of vaccination gave no protection unless it was efficient. An examination of the number of marks afforded some guide to the degree of protection, the evidence upon the whole pointing to the conclusion that the greater the number of marks the greater the protection. Proceeding to inquire what the operation of the law had effected for vaccination Mr. Burridge said that vaccination was made compulsory by the Act of 1853, but its universal practice was not strictly enforced until the passing of the Act of 1871, when it was rendered obligatory on the part of the guardians to appoint vaccination officers to enforce the operation of the law. For many years subsequently to the passing of this Act the number of infants unaccounted for with regard to vaccination in the year of birth was about 5 per cent. only, the remaining 95 per cent. having either been reported as successfully vaccinated, as insusceptible of vaccination, as having had small-pox, as having died unvaccinated, or as having received certificates of postponement. Since 1883, however, the percentage of infants unaccounted for had, he said, been steadily on the increase, until in 1896 22·9 per cent. of children were not finally accounted for. The conscientious objection clause had somewhat improved the figure. He attributed the large number of children unaccounted for between the years 1889–96 to the fact that a Royal Commission on Vaccination was sitting during those seven years. Mr. Burridge concluded his paper with suggestions for increasing the popularity of vaccination and for adding to its efficiency. Of these the most important, even from a medical point of view, was that every medical man should be a public vaccinator and should receive a supply of the Government lymph.

The PRESIDENT (Mr. Higham), in inviting discussion, said that all present would agree that Mr. Burridge had read an excellent paper. He did not think that the conscientious objector counted for much, though it was a pity that he had been manufactured. He suggested that the present system of penalties should be supplemented by a system of rewards. There was no reason why a small fee should not be paid to the man or woman who brought his or her child to be vaccinated soon after birth. There were many more objectionable ways of spending public money.

Mr. WATSON, while agreeing in the main with Mr. Burridge's paper, pointed out that available statistics were not complete enough to convince the anti-vaccinationist. He pleaded for a better understanding of statistics on the part of medical men.

Dr. SYMES-THOMPSON thought that the paper would convince all except those who would not be convinced.

Mr. RYAN regretted that the reader of the paper had made no reference to Dr. William Farr and had not given statistics relating to Switzerland since the abolition of compulsory vaccination in 1885.

Mrs. GARRETT ANDERSON spoke of the desirability of educating public opinion as much as possible with regard to this question. No mathematical proof was possible when dealing with human beings, though there was an experiment which would be very cruel—and she did not advocate it—which would approach such a proof. If 10 vaccinated and 10 unvaccinated children were allowed to stay in a small-pox ward for two or three days she thought that it would prove uncomfortable for the 10 unvaccinated children. With regard to the improvement of the Vaccination Act of 1898 she hoped that the powers at present possessed by boards of guardians would be taken away from them and put into the hands of the health authorities. There ought, she considered, to be a better supply of lymph and it should be supplied to the private practitioner. Glycerinated lymph, it had been stated, would keep only a week and the private manufacturer could not be expected to destroy stock remaining unsold at the end of seven days. In Germany there were 25 State institutions for the manufacture of lymph. Considering what a small-pox epidemic cost us it was false economy on the part of the Government not to produce an adequate supply of lymph. The word "compulsory" was an objectionable one and she suggested that "obligatory" might be better liked by some. If masters would make their employés show their vaccination certificate before hiring them much good would be done.

Mr. WARNER reviewed the objections of the conscientious objector.

Dr. S. MONCKTON COPEMAN said that his position at the Local Government Board somewhat tied his hands, but he felt that it would be unwise to let a remark made by Mrs. Garrett Anderson, to the effect that glycerinated lymph would only keep for a week, go before the public without correction. It occasionally happened that a batch of lymph was not particularly good, but the Local Government Board took every opportunity to test the lymph before it was distributed, and he had frequently had samples three months, six months, or even a year, old which gave good results. What he suspected Mrs. Garrett Anderson was referring to was the fact that public vaccinators were requested to use the lymph within a week of its being sent out. The reason of that was because it was occasionally found that public vaccinators had been known to leave the lymph in a warm room and in sunlight, two factors which were detrimental to lymph. The supply certainly did run short during the great rush in the early part of the year when the demand for lymph was 50 times as great as at other times and the Local Government Board did not feel justified in increasing the laboratories to an extent which would meet a permanent demand of that kind. At the present time it was not intended to supply private practitioners but it was not improbable that the scope of the supply of Government lymph might be increased.

Mr. BURRIDGE, on account of the lateness of the hour, only briefly replied to a vote of thanks.

THE METROPOLITAN WATER-SUPPLY: THE LONDON WATER BILL.

ON April 22nd the Joint Committee of the two Houses of Parliament continued its inquiry into the London Water Bill. At the opening of the proceedings Mr. PEMBER, K.C., stated the position held by the water companies in regard to the Bill. They were "unwilling sellers," and if their undertakings were to be transferred to a public body they desired that the terms of that transfer should be in their judgment, "fair and reasonable," which, being interpreted, means that they wished to get as much as possible. The case for the Bill was conducted with considerable reserve by Mr. RICKARDS, K.C., who is well acquainted with the subject and who has published a very useful little book on the London water-supply.

Mr. C. PERRIN, M.I.C.E., the Water Commissioner to the Local Government Board, first gave evidence as to the districts of supply of the water companies, the population of each district and its rateable value, and the present boundaries of "Water London."

Mr. RICKARDS then said that he did not propose to tender further evidence concerning the question of transfer and that he relied on the various Royal Commissions on the London water-supply. Counsel for the water companies did not entirely approve of this method of proceeding, but, in reply to Sir E. CLARKE, K.C., and Mr. PEMBER, the CHAIRMAN (Lord Balfour of Burleigh) held that the water companies would not be damaged by the absence of further evidence.

The counsel for the Bill then stated that they did not propose to tender evidence on the "appointed day" on which under a provision of the Bill the undertakings of the companies should be taken over by the proposed Water Board, for the constitution of which the Bill also provided. Lord BALFOUR held, however, that the limit of time laid down in the Bill was not entirely a matter for argument but was to some extent also a question of fact. In consequence of this decision Mr. J. LITHIBY, assistant secretary to the Local Government Board, was called to state why that department proposed the appointed day. The proposal was that whether the purchase price were then ascertained and paid or not the undertakings of the companies should vest in the Water Board on the appointed day. The arguments in favour of that proposal were that as it would probably be necessary that the value of the undertakings should be settled by arbitration and that as, moreover, arbitration was not an expeditious proceeding if a day were not definitely appointed on which the Water Board should take over its duties it might happen that the arbitration would hinder the board from beginning its work, and that it was likely that when the companies definitely knew that their businesses were to be transferred their interest in managing them for the benefit of their customers would be less keen. The arrangements for the transfer would occupy some years, and it might be seriously detrimental to the water consumers if there were no authority exercising adequate control over the supply of water during that period. The proceedings of the Water Board would be seriously hampered if it did not take over its duties on a definite day. The day which it was proposed should be that on which the duties were to be transferred to the Board was 12 months after June 24th, 1903. Before that date the companies would have ample time to "prepare their cases" and to get them settled. Mr. Lithiby said that he had had no experience of managing a water company and he added that the secretary and the assistant secretaries advised the Local Government Board on the London water question and that it had been his function to advise in this particular case.

The cause of the objection to the appointment of a particular day for taking over the water companies' undertakings can be readily understood from the cross-examination of this witness by Mr. PEMBER, who showed very clearly the fears of the water companies as to the effect of some of the evidence which might be tendered in the arbitration cases. *On which side*, he asked, would the engineer of a particular company, whose undertaking had already been transferred, give evidence—for the purchaser or for the vendor? Lord BALFOUR said that he presumed that the engineer would tell the truth and this suggestion was received with laughter.

The financial proposals of the Bill were supported by Mr. BANBURY, M.P., trustee and manager of the London Stock Exchange. Mr. Banbury said that he had not been consulted beforehand by the Local Government Board and that he had had nothing to do with the drafting of the Bill. The suggested mode of payment to the water companies by means of water stock was really due to Mr. Banbury's ingenuity and it was explained by him with great clearness at the thirtieth sitting of the Llandaff Commission which took place on July 18th, 1898.

In regard to the transference of the water companies' undertakings to the Water Board on a definitely appointed day Mr. JAMES MANSERGH at a sitting held on April 25th gave evidence in support of the Bill and Mr. GEORGE H. HILL gave evidence against the proposition. Both these gentlemen are past presidents of the Institute of Civil Engineers; the former was employed by the Local Government Board, the latter by some of the water companies. Mr. HAYWARD, the controller of the London County Council, gave evidence against the financial arrangements proposed in the Bill. The engineer employed by the Local Government Board said that he knew personally all the engineers employed by the metropolitan water companies; they were all gentlemen and would act as such. They would give the same evidence on the facts whether they were acting on the one side or the other; but—and this is the point on which a strong light is thrown on the ethics of expert evidence—"when it came to giving an opinion upon value then their evidence should be as a witness for the company" (*vide Times* report).

The Joint Committee met on April 29th, when the evidence of Mr. MACKINNON WOOD, chairman of the Water Committee of the London County Council, was taken.

The Joint Committee met again on April 30th, when Mr. MACKINNON WOOD was cross-examined. The evidence was taken of Mr. SHAW-LEFEVRE, late President of the Local Government Board, and of Mr. G. F. DEACON, late chief engineer to the Corporation of Liverpool. The evidence of both was condemnatory of the Bill, and after an hour's deliberation in private the Joint Committee decided to alter the constitution of the proposed Board by deleting the representation of the metropolitan boroughs and of the urban districts and boroughs in the counties of Essex, Kent, Middlesex, and Surrey.

HEALTH OF MALMESBURY.—At the meeting of the Malmesbury Town Council held on April 8th the medical officer of health (Mr. C. W. Pitt) presented his annual report for 1901. This stated that during the year 69 births had been registered, giving a rate of 23 per 1000. The deaths numbered 33 (18 less than in 1900), corresponding to a rate of 11 per 1000.

Looking Back.

FROM

THE LANCET, *SATURDAY, MAY* 1, 1824.

LEPROSY.

The following description of the species of leprosy commonly met with in India, is from the interesting work entitled—*Sketches in India*, written by Mr. HUGGINS, late an indigo planter in the district of Tirrhoot:—

"A person attacked with the species of leprosy prevalent in India is bloated in his face; his forehead, nose, lips and ears swell out; his nostrils expand; his eyes appear sunk and very fiery; the tone of his voice is altered to a loud and somewhat nasal sound; no eruptions appear upon his body, but his skin is hard, parched, and dry, having entirely lost its softness and moisture. About the shoulders he appears tight and contracted; his knees are stiff and motions constrained; the hairs fall off him, or are seen in their stunted stalks, dried up from want of wholesome nourishment; his breath is fœtid, his perspiration stopped, or if it flows at all is rank and stinking; he complains of excessive internal heat, cannot bear exposure to the sun, and is irregular in his discharges, the digestive organs performing their functions very imperfectly; there is a certain numbness seizes all his faculties, so that his sensations of pleasure and pain are considerably impaired; and lepers of this kind have no excessive propensity to venery after the disease appears, although they may have had it before. It is a common opinion that people seized with this malady are of a warm and amorous temperament; but when a person is seized with *leprosy*, the pleasure derived from such indulgencies, and the capacity for them are in a great measure annulled. After these primary symptoms, when the disease has become inveterate, the leper's fingers are gradually eaten away, and drop off at the joints; his toes are affected in a similar manner, sores break out about his ancles and wrists. During the progress of these cancerous attacks no pain is endured by the leper, owing to that numbness which I have already stated as pervading his system whilst the disease gradually proceeds ulcerating his flesh, and dissolving his joints, till the vitals become affected. In the last stage his flesh gapes with long sores, his mouth, nose and brain dissolve before the leprous poison, till death happily relieves him from such accumulated miseries. Some fakirs profess to cure this disease, if applied to at an early stage of it; and I have myself known men healed by them. To effect a cure these men administer a root procured from Nepaul, which causes copious salivation; they also put the patient on a regimen, forbid him the use of salt and sexual cohabitation, and the lepers who recover generally abstain from these during the remainder of their lives."

THE ROYAL ACADEMY.

THE 134th exhibition of the Royal Academy of Arts which will be open to the public on May 5th is an average show. That is to say, there are good pictures and mediocre pictures, but there is no work like the famous "Ascher Wertheimer" of Mr. Sargent exhibited in 1898. That accomplished artist sends eight portraits, of which perhaps the best are (157) "Alfred Wertheimer, Esq.," and (323) "The Duchess of Portland." The painting of the jewels in the last-named is comparable to that of Titian in the "Family of Darius." To our thinking, however, by far the best portrait in the exhibition is (202) "Lady Marjorie Manners" by Mr. Shannon. Both colour and quality are beautiful and the way in which the various shades of black are managed is worthy of all praise.

Of portraits which have a more or less medical interest we must mention (134) "The Right Honourable the Lord Mayor of London," Sir Joseph Dimsdale, M.P., by Mr. A. S. Cope; (244) an admirable picture of "Lord Kelvin," by Mr. Ouless; (291) "Professor J. B. Pettigrew," also by Mr. Ouless; and (788) a very good likeness of Surgeon-General Jameson by Mr. W. B. Symonds. A clever portrait is (45) "Miss Gertrude Bowles," by Mr. Mouat Loudan. Of figure studies Mr. H. J. Draper in (28) "A Deep-sea Idyll" shows his usual mastery in anatomical drawing and flesh painting; while good anatomical drawing and modelling triumphing over difficulties of position are to be found in (110) "Many Waters cannot Quench Love," by St. George Hare, and in (149) "Storm Nymphs," by the President. In (295) "The Plague," Mr. John Collier has painted a gruesome subject with great skill. His dead lady looks really dead; we have never seen the absolutely lacklustre eye of a corpse represented more truthfully. Of other pictures Mr. Charles Sims's "The Top o' the Hill" (24) is full of breeze and light and atmosphere, while Mr. W. Hatherell in his "Gleaners Waiting for the Last Load" (92) sends a clever study of a low evening lighted landscape. In the large room (160) "A Tanagraean Pastoral," by Mr. G. H. Boughton, exhibits all the painter's well-known grace and delicacy of handling, while special mention must be made of (166) "The Isle of Avalon," by Mr. J. W. North; of (167) "Tucking the Rick," by Mr. La Thangue; of Mr. Melton Fisher's charming picture (179) "The Mirror"; of (191) Mr. Hook's "Home from the Marshes," wherein we grieve to state that the returning sportsman has shot a heron; of (198) by Mr. W. J. Donne, being a very original presentment of "The Chalk Pit, Mersham"; and (201) a perfect little gem by Sir L. Alma Tadema, "Caracalla." Mr. George Clausen, in (648) "The Rickyard: a Winter Idyll," gives with his usual skill the effect of the cold wintry sunshine. Of the sculpture we may mention (1600) "Fairy Tales," a pretty little statuette, by Mr. F. M. Taubman; (1609) Mr. Brock's statue of Gladstone; (1617) Mr. Swan's wonderful representation of a wounded leopard. It is transfixed by an arrow, at which it is tugging in a vain effort to extract the missile. The late Mr. Onslow Ford has several examples of his art, the most noticeable of which is (1723) "Snowdrift"; another (1694), a silver and ivory group, "St. George and the Dragon," is a piece of real handicraft. St. George is standing on the dying dragon and he is habited in one of those wonderful petticoated suits of armour which, although they look all right when the wearer is on horseback, are not suitable to a dismounted man. Of the water-colours we have only space to refer to Mr. Goodwin's exquisite "Amalfi" (978).

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Bath Urban District.—We are glad to learn from the current annual report of Dr. W. H. Symons that the criticisms which we published in our columns in October, 1898, as to sanitary arrangements at the Royal Mineral Water Hospital at Bath have resulted in an enormous improvement in the condition of the institution. The general sanitary arrangements are now, Dr. Symons states, "models of applied science." This institution was founded in 1737 with the view of gratuitously extending to the poor of the United Kingdom the benefits of the local hot springs. Dr. Symons has gone very thoroughly into the distribution of tuberculosis in Bath, and he finds that during the last 32 years there have been in some streets no deaths from this disease, whereas in others the deaths have been numerous. In one street he found as many as 52 deaths and as an instance of the diminishing number of deaths from phthisis in one selected locality of the city the figures by decades have been worked out. In 1866–75 there were 34 deaths and in the next decade there were 31. In the five years 1886-90 improvements were made and during this period there were but 11 deaths. From 1891 to 1900 there were in the same area but five deaths from this disease. In connexion with the control of phthisis in Bath it may be mentioned that the Corporation has contributed £500 towards the erection of the Winsley Sanatorium for consumptive patients and an annual subscription, to provide two beds, of £130.

Croydon Rural District.—The Croydon sewage farm, which would appear to be situated in or near this district, gave rise to serious complaints during the past year and we are glad to hear that the sewage is now to be further treated. Diphtheria has been very prevalent in a locality known as Beddington Corner, which is bounded on one side by the Croydon sewage farm and on the other by the polluted Wandle river. The soil of the Corner is water-logged and Mr. C. M. Fegen, the medical officer of health of the district under consideration, is evidently inclined to ascribe to the topographical conditions of the Corner some share in the production of diphtheria, even if such share be one of predisposition only. The district council provides antitoxin and opportunities for bacteriological examinations for the medical practitioners of the district. The foul condition of the Wandle remains unabated, but the several district councils morally involved have conferred together with a view to purify the stream.

Stafford Urban District.—Dr. F. M. Blumer reports that this district council has taken a modern view of preventive action in relation to diphtheria and that it has, in place of providing temporary hospital accommodation, aimed at inoculating persons who have been exposed to diphtheria infection with the corresponding antitoxin. The medical officer of health has himself "protected" 124 persons and medical practitioners have inoculated 44 other exposed individuals. Of the total number thus treated but one contracted the disease. The district council provides the serum gratuitously whether it be for use in a curative or protective sense.

Wigan Urban District.—Attention has been paid to the smoke nuisance in this district during 1901 and the complaints in this direction are, it seems, diminishing. But the allowance of eight minutes per hour is a liberal one and the Wigan standard is hence not a high one. As evidence of the improvement which in practice can be effected Mr. William Berry, the medical officer of health, quotes from a report of Dr. J. E. Gould of Bolton, in which place there are 30 chimneys practically smokeless, 90 emitting black smoke for less than one minute, 37 for less than two and a half minutes, and 50 for more than that period per half hour respectively. In this latter group the firms concerned are to be communicated with. Mr. Berry asks why the same conditions which obtain in Bolton cannot be secured in Wigan.

Stretford Urban District.—Mr. W. J. Heslop's annual report embodies that of the sanitary inspector and from this latter we learn that as regards the prevention of smoke 116 observations of 60 minutes each were made. Out of this number of observations the time limit for black smoke (four minutes per hour) was exceeded 16 times, and proceedings were taken against four of the offenders, one firm being fined £5. The average emission of black smoke was one minute seven seconds, as against an average of two minutes 40 seconds for the preceding year. In one case the average was 13 minutes 15 seconds per hour.

Richmond (Surrey) Urban District.—Dr. J. H. Crocker, while considering the control of infectious disease in elementary schools, urges the necessity for the systematic medical examination of scholars. The district council should, he thinks, be responsible for this and as in many towns the medical officer of health would have no time for such a work the appointment of an assistant to the medical officer of health is advocated. As, however, we have learnt in London, there may be difficulties in the examination of school children, and this being so it would be well if the example of Eccles were followed and local Acts obtained giving power to make such an examination. The Eccles Act enables the medical officer of health to enter any public elementary school at all reasonable times and to examine the scholars. There can, we think, be little doubt but that this medical examination of scholars will in the future be much more fully carried out than is the case at the present time and that such examination will be made not only in respect of infectious diseases but also with a view to detect early defects and to take the necessary prophylactic measures.

Eastbourne Urban District.—The chief incidence of scarlet fever in this borough is on that ward which contains the isolation hospital, and Dr. W. G. Willoughby has evidently some misgivings that the association may be one of cause and effect. He has, however, no faith in the aerial spread of scarlet fever and hence he is driven back for an explanation upon some communication between the patients and the outside world by infected persons or things. It appears that two heads of families who have daily duties at the hospital do live outside the institution, but in these cases none of the children belonging to the families of such officers have been infected. Dr. Willoughby does not tell us anything as to the locality of the cases or whether there is any graduated incidence around the hospital. Certainly no such incidence can be observed around the scarlet fever hospitals of the Metropolitan Asylums Board by a study of the spot maps which are issued annually, nor has such incidence been observed elsewhere.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8582 births and 4851 deaths were registered during the week ending April 26th. The annual rate of mortality in these towns, which had been 17·4 and 18·3 per 1000 in the two preceding weeks, declined again to 17·0 per 1000 last week. In London the death-rate was 17·4 per 1000, while it averaged 16·8 in the 75 other large towns. The lowest death-rates were 6·9 in Hornsey, 7·2 in Croydon and in Walthamstow, 8·5 in East Ham and in Handsworth, 9·9 in Swansea, 10·0 in Hanley, and 10·1 in Smethwick; the highest rates were 21·1 in Liverpool, 21·4 in Salford and in Huddersfield, 21·8 in Grimsby, 23·3 in Burnley, 23·7 in Wigan, 24·3 in Great Yarmouth, and 33·3 in Merthyr Tydfil. The 4851 deaths in these towns last week included 534 which were referred to the principal zymotic diseases, against 596 and 550 in the two preceding weeks; of these 534 deaths 158 resulted from whooping-cough, 132 from measles, 74 from diphtheria, 55 from small-pox, 45 from diarrhœa, 43 from scarlet fever, and 27 from "fever" (principally enteric). No death from any of these diseases was registered last week in Hornsey, Hastings, Devonport, Warrington, Stockton-on-Tees, Newport (Mon.), or Swansea; while the highest zymotic death-rates were recorded in Tottenham, Burton-on-Trent, Rochdale, Burnley, Gateshead, and Merthyr Tydfil. The greatest proportional mortality from measles occurred in Great Yarmouth, Burton-on-Trent, Rochdale, Burnley, Barrow-in-Furness, Gateshead, and Rhondda; from diphtheria in Willesden, Tottenham, Leyton, and Merthyr Tydfil; and from whooping-cough in East Ham, Handsworth, Aston Manor, Bootle, and Gateshead. The mortality from scarlet fever and that from "fever" showed no marked excess in any of the large towns. Of the 55 fatal cases of small-pox in these towns registered last week 42 belonged to London, seven to West Ham, four to Tottenham, one to Walthamstow, and one to Walsall. The number of small-pox cases under treatment in the Metropolitan Asylums hospitals, which had been 1522, 1437, and 1431 at the end of the three preceding weeks, had risen again to 1515 on Saturday, April 26th; 387 new cases were admitted during the week, against 376, 274, and 328 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital at the end of the week was 2188, against 2126, 2146, and 2155 respectively on the three preceding Saturdays; 283 new cases were admitted during the week, against 228, 264, and 269 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 317, 299, and 316 in the three preceding weeks, were 315 last week and were slightly below the corrected average number. The causes of 56, or 1·2 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Nottingham, Salford, and in 46 other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Bootle, St. Helens, Sheffield, and Middlesbrough.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 21·3, 22·1, and 24·6 per 1000 in the three preceding weeks, declined again to 21·1 per 1000 during the week ending April 26th, but was 4·1 per 1000 above the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 17·2 in Perth and 18·2 in Aberdeen to 22·7 in Glasgow and 23·4 in Greenock. The 682 deaths in these towns included 29 which were referred to whooping-cough, 17 to diarrhœa, 13 to measles, five to scarlet fever, four to diphtheria, one to small-pox, and one to "fever." In all 70 deaths resulted from these principal zymotic diseases last week, against 56 and 63 in the two preceding weeks. These 70 deaths were equal to an annual rate of 2·2 per 1000, which was 0·3 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of whooping-cough, which had been 21 in each of the two preceding weeks, increased last week to 29, of which 12 were registered in Glasgow, 10 in Aberdeen, and four in Dundee. The deaths from diarrhœa, which had been eight and 10 in the two preceding weeks, further rose to 17 last week, and included nine in Glasgow, four in Dundee, and two in Aberdeen. The fatal cases of measles, which had been 11, 10, and 18 in the three preceding weeks, declined again last week to 13, of which four occurred in Dundee, three in Paisley, and two in Glasgow. The deaths from scarlet fever, which had been eight, eight, and two in the three preceding

weeks, rose again to five last week, and included three in Glasgow. The fatal cases of diphtheria, which had been two and seven in the two preceding weeks, declined again last week to four, which were all registered in Glasgow, where the fatal cases of small-pox and "fever" were also recorded. The deaths referred to diseases of the respiratory organs in these towns, which had been 160, 188, and 199 in the three preceding weeks, declined again last week to 161, and were slightly below the number in the corresponding period of last year. The causes of 18, or nearly 3 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had declined from 27·5 to 23·0 per 1000 in the four preceding weeks, rose again to 26·8 per 1000 during the week ending April 26th. During the past four weeks the death-rate has averaged 25·6 per 1000, the rate during the same period being 17·7 in London and 20·3 in Edinburgh. The 195 deaths of persons belonging to Dublin registered during the week under notice were 28 in excess of the number in the preceding week, and included 10 which were referred to the principal zymotic diseases, against six, 11, and 10 in the three preceding weeks; of these, four resulted from "fever," three from whooping-cough, two from measles, and one from diarrhœa. These 10 deaths were equal to an annual rate of 1·4 per 1000, the zymotic death-rates during the same period being 2·3 in London and 0·3 in Edinburgh. The deaths referred to fever, which had been one, two, and none in the three preceding weeks, increased last week to four. The fatal cases of whooping-cough, which had been two and one in the two preceding weeks, rose again to three last week. The two deaths from measles corresponded with the number in the preceding week. The 195 deaths in Dublin last week included 37 of children under one year of age and 48 of persons aged upwards of 60 years; the deaths of infants showed a slight decline from the number in the preceding week, while those of elderly persons were considerably in excess. Five inquest cases and three deaths from violence were registered; and 72, or more than a third, of the deaths occurred in public institutions. The causes of 11, or nearly 6 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Fleet Surgeon I. H. Anderson is placed on the retired list with the rank of Deputy Inspector-General.

The following appointments are notified:—Staff Surgeons: A. M. Page to the *Sutlej* and G. T. Collingwood to the *Australia*. Surgeons: A. J. Wernet to the *Sutlej* and P. L. Crosbie to the *Benbow*.

ROYAL ARMY MEDICAL CORPS.

Major Law and Major A. Dodd join the Home District for duty. Lieutenant L. F. F. Winslow proceeds to Aldershot for duty. Lieutenant F. W. Lambelle assumes medical charge of women and children, Marlborough Lines, Aldershot.

INDIA AND THE INDIAN MEDICAL SERVICES.

The King has approved of the following promotions among officers of the Indian Medical Service made by the Government of India:—Lieutenants to be Captains (dated Jan. 28th, 1902): John Cyril Holdich Leicester, Hubert Innes, William Southwick Willmore, Albert Elijah Walter, Corrie Hudson, Leslie Thomason Rose Hutchinson, Charles Frederick Weinman, Hamilton Maxwell Cruddas, Alexander Mathers Fleming, Ellacott Leamon Ward, John Norman Walker, Vivian Heathcote Roberts, John Elliott Robinson, George King, Thomas Spinks Ross, George Patrick Thomson Groube, Pandit Piaraylal Atal, William McMullen Pearson, and David Claude Kemp.

IMPERIAL YEOMANRY.

The undermentioned officers resign their commissions and receive new commissions subject to the provisions of the Militia and Yeomanry Act, 1901, each retaining his present rank and seniority, viz.:—

Oxfordshire (Queen's Own Oxfordshire Hussars): Surgeon-Lieutenant-Colonel H. P. Symonds. Worcestershire (the Queen's Own Worcestershire Hussars): Surgeon-Lieutenant J. H. Beilby.

Dorset (Queen's Own): Charles Wright Edwards, formerly Captain, 3rd Battalion West Yorkshire Regiment, to be Surgeon-Lieutenant. 3rd County of London (Sharpshooters): Ernest Morley Rooke to be Surgeon-Lieutenant. Montgomeryshire: Surgeon-Lieutenant F. E. Marston to be Surgeon-Captain.

ROYAL ARMY MEDICAL CORPS (MILITIA).

William Henry Gerard Herbert Best to be Lieutenant and to be seconded for service under the Colonial Office.

VOLUNTEER CORPS.

Rifle: 2nd Volunteer Battalion the East Yorkshire Regiment: Surgeon-Lieutenant-Colonel W. Stephenson resigns his commission, with permission to retain his rank and to wear the uniform of the battalion on retirement. Galloway: The undermentioned officer resigns his commission: Surgeon-Lieutenant J. H. Douglas. Dated April 30th, 1902. 1st Volunteer Battalion the King's Own (Yorkshire Light Infantry): The undermentioned Surgeon-Lieutenants to be Surgeon-Captains: E. Lee and S. L. Potter. 13th Middlesex (Queen's Westminster): Surgeon-Lieutenant C. A. Morris, C.V.O., to be Surgeon-Captain.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

The Woolwich Companies: Lieutenant C. T. W. Hirsch resigns his commission.

VOLUNTEER INFANTRY BRIGADE BEARER COMPANIES.

Sherwood Foresters: William James Reid to be Surgeon Lieutenant. South Wales Borderers: Surgeon-Captain J. W Davies, from 3rd Volunteer Battalion the South Wales Borderers, to be Surgeon-Captain and to command under paragraph 55A Volunteer Regulations.

SOUTH AFRICAN WAR NOTES.

Lieutenant Beatty, R.A.M.C., is reported still dangerously ill on April 27th.

Major C. W. Johnson, R.A.M.C., and Civil Surgeons White, Gray, Marris, Coates, Williams, and Madden are returning home in the *Orotava* which left Cape Town for England on April 25th.

Lieutenant J. H. R. Winder, R.A.M.C., and Civil Surgeons French, Liptrot, and Goulding are returning home in the *Sicilia* which left Cape Town for England on April 22nd.

MENTIONED IN DESPATCHES.

In a despatch from Lord Kitchener, dated Pretoria, March 8th, and published in the *London Gazette* of April 25th, the following names are mentioned: Major R. Caldwell, R.A.M.C., "for good service in attending the wounded under heavy fire in an attack on Colonel Firman's column on Dec. 25th, 1901"; Civil Surgeon Wedderburn, "for his attention to the wounded ..... under heavy fire" in Damant's action on Dec. 20th, 1901; Civil Surgeon Munn, "for devotion to duty under heavy fire" at Kaffir Spruit on Dec. 19th, 1901; and Surgeon-Captain Leake "for his devotion to duty in attending to wounded at Vlakfontein on Feb. 8th, 1902, when he was wounded in three places."

Private J. Jessop, R.A.M.C., is mentioned for good service in Damant's action on Dec. 20th, 1901, and Serjeant-Major W. F. Watterton, R.A.M.C., and Private P. J. Michelmore, R.A.M.C., are mentioned for devotion to duty in attending the wounded under heavy fire during the attack on Firman's camp on Dec. 25th, 1901. Private Michelmore has been promoted Corporal by the Commander-in-Chief.

LEAN'S ROYAL NAVY LIST.

This list which is published quarterly by Messrs. Witherby and Co., 326, High Holborn and 4, Newman's-court, Cornhill, is an accurate book of reference of the greatest use not only to members of the Royal Navy but to every one who is in any way brought into contact with our first line of defence. We notice that appointments made as recently as April 10th are included in the latest issue which now lies before us.

THE GERMAN HOSPITAL.—The fifty-seventh annual dinner of the German Hospital was held on April 29th in the Hôtel Métropole, the German Ambassador, Count Metternich, being in the chair. It was stated that 1846 in-patients were admitted during 1901 and that the out-patients numbered upwards of 27,000. Contributions amounting to £2905 were acknowledged, including £200 from the German Emperor and £50 from the Emperor of Austria.

Correspondence.

"Audi alteram partem."

THE MIDWIVES BILL, 1902.

To the Editors of THE LANCET.

SIRS,—Having recently looked up the Home Office returns of coroners in connexion with inquests upon the newly born, I was astonished at the number of cases in which a verdict of murder was actually returned. It is a matter of common knowledge that juries will only return such verdicts in exceptionally bad cases, so I think that the following figures furnish food for comment. In 1900 there were 614 inquests held upon the newly born out of a total of 37,076 inquests held upon persons of all ages. At inquests held upon the former there were no less than 35 verdicts of wilful murder, whilst at those held upon the latter there were only 145 such verdicts. The rate per 1000 inquests held upon the newly born of verdicts of murder works out at 57, whilst the rate of inquests held upon all other cases works out at 3·8. Comparing private experience of the number of still-born children with the approximate knowledge of the number which are said to be still-born, no just proportion can be found. It is therefore, perhaps, more than a matter of mere suspicion that the amount of infanticide in the country is very considerable and very disgraceful. Unfortunately, the newly born, whose very dependence upon others should excite commiseration and pity, have no incorporated society to protect their interests; they are therefore left out of consideration when influential persons are busy with legislation.

I now ask the question: Does the Bill for the Registration of Midwives at present before Parliament do anything for the protection of the lives of the newly born? Does it not, in reality, render it more easy for those mothers who desire the death of their children to have the deaths procured with less chance of discovery, subsequent inquiry, and perhaps punishment? I say perhaps, for it must be well known that any chance of punishment in these cases is a remote one. It appears to me that the Bill in its present condition is one which contains elements of great danger. I do not myself see how it can be amended, for it is radically unsound. The medical profession will, I venture to believe, be well advised if it makes no efforts to amend it, but leaves its rejection to the good sense of the House of Commons.

I am, Sirs, yours faithfully,

Hatfield, April 28th, 1902. LOVELL DRAGE.

To the Editors of THE LANCET.

SIRS,—I have been requested by the council of the Medical Provident League to ask your permission to express in your widely read columns their collective opinions concerning the present Midwives Bill. They would studiously avoid the imputation of any unworthy motives and feel confident that those who have promoted this legislation—however mistaken they may be—must have been actuated by the best intentions. It is to be hoped therefore that any discussion which takes place upon this subject may be conducted in that spirit of courtesy and fair play which men of all opinions can appreciate.

1. It is believed that general practitioners, owing to their over-busy lives, cannot have had the leisure or opportunity to study this Bill—that they cannot have realised how deeply detrimental such legislation must be both to themselves and to the public—or that they would have taken the most active steps to secure its defeat. Instead of which, week follows week, the matter is scarcely referred to in the press, and there appears to be no organised opposition to the Bill.

2. No one can understand so fully as the medical profession the injury which ignorant midwives can work. But it can be proved that the extent of the evil has been greatly exaggerated, and, moreover, that it is being diminished year by year by the efforts of our profession. The often-repeated argument that because midwives have always existed so they must always continue to exist must appear ridiculous to those who are aware that many races and species have become extinct in the past, and that one of nature's most inexorable laws decrees the extermination of the unfit. It is submitted that even if midwives—and other plagues—were necessary evils at the time of Moses they can only be regarded as septic anachronisms in the twentieth century. And, as a demonstrable fact, midwives are rapidly dying out in England; their place is being taken by more or less well-trained obstetric nurses. The advocates of the registration of midwives have studiously avoided any reference to the striking fact that last year out of 4,536,000 people in the county of London there were only **366** midwives, and of these five were over 75 years of age and no less than 83 were more than 55 years old. It may confidently be predicted that the census returns for the rest of England will show similar figures. It is submitted, then, that there is no need for special legislation for such a small and diminishing number of workers.

3. It has been asserted that in those countries in which midwives are registered the mortality in childbirth is much higher than in this country. Accurate and recent statistics on this point would be very valuable.

4. The essential feature of the present Midwives Bill is that it legalises a new order of independent practitioners of midwifery, recognised and supported by the State in their practice. Putting aside all the specious sophistry and special pleading which has darkened counsel on this matter, what does this mean? Simply that the midwife, after some three months' work and at a cost of some £15, would be placed by Parliament precisely on the same level in midwifery practice as the medical practitioner who has devoted five years and has paid probably £1000 for his education. It is mere futile foolishness to pretend that she will not enter at once into active competition with the general practitioner, or to imagine that she will carefully confine her attention to the poorer classes, or to expect that she will refrain from practising medicine as well as midwifery. No power on earth could prevent her from doing any one of these things. She will be a registered practitioner and the public will as eagerly swallow her pretensions as they now accept in blind faith the potency of anything else to which the Government stamp is affixed. It is submitted that the first and greatest effect of this legislation would be to flood the country with more or less well-educated women only too eager to avail themselves of the opportunity of becoming licensed quacks.

5. It is the danger to the public rather than the damage to individual practitioners which will most appeal to our self-sacrificing profession. So it is submitted that to place a government stamp of efficiency upon the existing inefficient, decadent midwife would be a cruel delusion and a snare to the poorer classes. It would be the more unjustifiable because Parliament in 1886 insisted upon an infinitely higher standard for medical men—that is to say, for the protection of the richer classes of society. The last Medical Act ordained that no practitioner should be registered unless proficient in medicine and surgery as well as in midwifery. It is a truism that parturition involves dangers and results which require a complete knowledge of medicine and surgery to combat successfully. Yet Parliament is being asked to guarantee to the ignorant poor the efficiency of midwives who know very little of obstetrics and nothing whatever of the other sciences. Are the lives and safety of poor women of less account than those of the rich? But Parliament has been gravely assured that the medical profession approves of this Bill and the absence of all opposition from us has naturally afforded support to the statement. The second reading of the Bill was taken without a division. The Bill has passed through committee almost unaltered—certainly without one real safeguard being added. Is it possible that the profession will permit it to pass without a single protest?

6. Not only is the principle of this Bill bad, its details are ridiculous. The whole demand for legislation is based on the alleged need of supervising midwives. Yet this supervision is gravely placed in the hands of borough or county councils—that is to say, of worthy gentlemen engaged for the most part in commercial or agricultural pursuits and who must be entirely ignorant of midwifery. Yet they are to be made the judges concerning charges of malpraxis or misconduct on the part of the midwives in their district! It is further submitted that no medical man is likely to take upon himself the thankless and most invidious task of making or supporting a charge of malpraxis or misconduct against a midwife, and who else could or would do so? In brief, it is submitted that the so-called supervision of midwives would inevitably become a Gilbertian farce, and that the midwife would be the most free and independent practitioner in these happy islands.

7. It is being said that opposition is hopeless. The Medical Provident League declines to adopt so invertebrate an attitude. It only comes forward at this juncture because no

other body is apparently moving in the matter and because it realises the very grave public and professional dangers involved in this legislation. But the league will not court failure by taking any action without adequate support. The crisis is acute and demands the most active work and assistance from everyone opposed to this Bill. If at least 500 practitioners will promise their help and a small subscription each towards the necessary expenses, the Medical Provident League will contribute £10; I will give the same amount; other donations will be forthcoming; and opposition shall be organised. But it is already the eleventh hour and if anything is to be done it must be done *immediately*. It is therefore suggested that those who are opposed to this legislation and who will help to prevent it if possible should write *at once* as follows:—

> I will give my active assistance in opposing the Midwives Bill.
> I inclose postal order (or cheque) towards the expenses.
> My Member of Parliament is ————.
> And I also personally know ———— M.P.

with signature and address very clearly written.

This may be sent either to the Secretary, Medical Provident League, 11, Adam-street, Strand, W.C., or to

Your obedient servant,

BEDFORD FENWICK.

20, Upper Wimpole-street, London, W., April 19th, 1902.

THE CASE OF DR. W. T. LAW.

To the Editors of THE LANCET.

SIRS,—May I be allowed to direct the kind attention of your readers to a meeting of friends and sympathisers of Dr. W. T. Law which will be held at the King's Hall, Holborn Restaurant, W.C., on Friday afternoon, May 9th, 1902, at 2 o'clock?

I trust that your excellent leading article on Forsythe *v.* Law, which appeared in THE LANCET of March 8th, 1902, p. 680, was duly read and weighed by your numerous readers. It begins by stating that: "It has seldom been our duty to comment on a more painful case," and at the close these words occur: "Had Dr. Law rendered his services over a term of years for gain and profit—which is not customary when the patient is a nurse—there might have been more room for criticism, but what are the facts? He gave freely of his time, his skill, and his kind-heartedness for no other reward than the satisfaction of feeling that he was discharging a charitable office with the hope of alleviating human suffering. He acted the good Samaritan—not wisely, perhaps, but too well—and what was his reward? Scorn and contumely were heaped upon him by some who were and are to be pitied and by others who deserve severest blame. He will have the consolation which his merits deserve, given unstintedly by his professional brethren and by a generous and just public opinion. His legal and moral acquittal was complete."

In consequence of the poverty of the plaintiff Dr. Law will have to defray his own heavy expenses and as he is not a wealthy man, as is erroneously considered, there will be ample scope for the display of practical sympathy, and for this object the meeting will be held. Sir Samuel Wilks, Bart., Sir Henry Thompson, Bart., the President of the Royal College of Physicians of London—viz., Sir William Selby Church, Bart.—and many other distinguished and esteemed members of the medical profession have shown their sympathy for Dr. Law. Unfortunately, Dr. Law was not a member of either of the medical defence societies, but I may state for the information of the gentlemen who blame him for not being so that they cannot do better than take a lesson of charity from the magnanimity displayed by the former presidents of the Medical Defence Union—viz., Dr. W. S. A. Griffith and Mr. Victor Horsley—who already with others have kindly contributed.. I am anxious to be able to announce subscriptions at the meeting from members of a noble and generous profession which will be a credit to the profession itself and to the satisfaction and delight of him who is said to have shown unwise benevolence. In this hard, cold, calculating world it is not usual to meet with men who display an excess of benevolence either in thought or deed. When such a one is found let us treat him as he richly deserves.

Mr. John Langton writes to me and says: "I hope the profession will show by their gifts that they have solidarity with their professional brethren in time of trouble." I shall be glad to receive and acknowledge any contributions that may be sent on behalf of Dr. W. T. Law. Postal orders or cheques should be crossed "Law Fund, London and County Bank, Holborn." I am, Sirs, yours faithfully,

RICHARD PARAMORE.

2, Gordon-square, W.C., April 28th, 1902.

TRAUMATIC DISLOCATION OF THE CRYSTALLINE LENS.

To the Editors of THE LANCET.

SIRS,—The perusal of Mr. S. Stephenson's interesting paper on Spontaneous Cure of Senile Cataract in THE LANCET of April 26th (p. 1175), reminds me of a case of dislocation of the crystalline lens that came under my care when on the medical staff of Hanwell Asylum. The patient, a healthy young woman suffering from mania, received a violent blow on the eye from another patient in the same ward. I saw her directly afterwards and found a transverse rent in the cornea and the lens lying on her cheek. I treated the injury precisely on the plan adopted after the usual operation for cataract, and at the end of a week, on removing the pad and bandage, I was pleased to find the wound in the cornea perfectly united and the patient recovered her normal vision without the least bad symptom. The case was interesting as showing the immunity with which the eye can sustain a severe injury and the facility of recovery under very simple treatment.

I am, Sirs, yours faithfully,

Shanklin, I.W., April 28th, 1902. J. HAWKES, M.D. St. And.

TREATMENT OF CHRONIC HEART DISEASE BY RESISTED EXERCISES, OR THE SO-CALLED "SCHOTT" OR "NAUHEIM" TREATMENT.

To the Editors of THE LANCET.

SIRS,—Lest there should be any misunderstanding as to the latter part of the title to my letter, I should like to point out, as has been done before,[1] that the treatment of heart disease by resisted exercises was carried out in Sweden before the Drs. Schott were born and that they merely adopted the Swedish method and combined it with the Nauheim baths. But great thanks are nevertheless due to the Drs. Schott for bringing the treatment prominently before the profession and before the world at large. There are few forms of chronic heart disease in which the treatment fails to afford relief, for if due care be taken even the most serious forms can be dealt with with advantage.

The Nauheim waters are supposed to do good by virtue of the free carbonic acid gas which they contain. The gas keeps on bubbling up through the water and is said to stimulate the cutaneous nerve-endings and reflexly the central nervous system. The Nauheim baths can very easily be prepared artificially with the help of Sandow's effervescing powders and tablets. A mild non-carbonated bath is prepared as follows. In 50 gallons of water at 93° F. four and a half pounds of Nauheim salt are dissolved; three minutes before the bath is to be used one packet of Sandow's effervescing powders is added and stirred and two of his effervescing tablets are placed on the bottom of the bath. The temperature of the water should be 91° F. when ready for use. A medium non-carbonated bath contains six and a half pounds of Nauheim salt, a strong non-carbonated bath 10 pounds of the salt. A mild carbonated bath is prepared in a similar way except that four packets of Sandow's powders are added and eight of his tablets placed along the bottom of the bath. It contains four and a half pounds of Nauheim salt. A medium carbonated bath contains six and a half pounds and a strong bath 10 pounds of the salt. The duration of the bath should be 10 minutes, increased to 12 and 15 minutes. The bathroom must be well ventilated and the patient after the bath wrapped in a large warm Turkish towel-sheet and dried. He should rest lying down for one hour after dressing. The bath itself should be either exceedingly well coated with enamel paint, or, still better, be a porcelain or wooden one, as the acid is apt to corrode a metal bath.

[1] THE LANCET, Dec. 22nd, 1894, p. 1515.

Having thus very briefly considered the baths we now come to what may be looked upon as the most important part of the treatment—viz., the resisted exercises. The great principle underlying the treatment is to diminish the peripheral resistance to the onward flow of blood and so to make it easier for the heart to perform its work. There are three ways in which this can be done by exercises: (1) by acting on the muscular system; (2) by acting on the respiratory system; (3) by acting on the digestive system.

1. Let us consider what takes place when a muscle is at work. It alternately contracts and relaxes. When a muscle contracts it hardens; the intra-muscular and intra-fascicular blood- and lymph-vessels become squeezed, the fluid is driven out, and owing to the valves which are placed in the veins and lymphatics the fluid is driven towards the heart. This causes a relative fluid-emptiness in the muscle, so that when it relaxes a suction is created drawing the blood towards and into the muscle and away from the heart. Each muscle may, indeed, be looked upon as an *additional heart*. As the heart itself is the great central pump in the body, so is each individual skeletal muscle a peripheral pump which by alternately contracting and dilating pumps the blood onwards. If a single muscle were to be thus acted upon the result might be infinitesimal, but when groups of muscles, say of a limb, are made alternately to contract and relax, the influence becomes important. The fact that muscular contractions really do have a marked effect can be demonstrated by examining the pulse; for whereas the pulse before the exercises may be irregular and quick the almost invariable condition found after exercising is a slower and more regular pulse-rate. I have seen instances where there has been a difference of 20 beats a minute before and after exercising. Besides thus mechanicaly helping on the blood-stream, a more remote result is that waste products and exudations with which the muscles probably are infiltrated are cleared away and that the metabolism becomes more active. It is easy, then, to understand why resisted exercises should be helpful in heart disease. An over-full and dilated heart struggling to contract and to drive the blood onward against great peripheral resistance finds its work eased and feels itself able to perform its function with less output of energy, the result of which is that its action becomes slower and more regular. This result may not last long to begin with—perhaps a couple of hours—but by persevering with the treatment day by day for some time it cannot but permanently improve and strengthen the diseased organ. The physiological effect of resisted muscular exercises on an over-full and dilated heart is very much the same as the effect of emptying an over-distended bladder. The analogy is complete, for are they not both hollow muscular organs?

2. By acting on the respiratory system. It is well known that during an inspiration the large veins in the chest dilate, as do also the cardiac auricles. A suction action is thus established the effect of which is to draw the blood away from the periphery towards the heart. But besides this, by alternately filling and emptying the lungs of air by deep inspirations and expirations the circulation through the pulmonary capillaries and vessels is very much facilitated, for when an air-vesicle dilates during inspiration and resiles during expiration the capillaries in the vesicular walls are alternately put on the stretch and contracted, and this tends strongly to relieve any congestion which may be, and often is, present in the lungs in chronic heart disease. There is yet another way in which respiratory exercises are beneficial—viz., by ensuring a more thorough aeration and oxygenation of the blood, for thus more blood is made to course through the pulmonary circulatory system in any given time.

3. By acting on the digestive system. A common symptom in patients suffering from chronic cardiac disease is irregularities in the performance of the abdominal organs, not—at least in the earlier stages—owing to any actual local lesion, but as the result of the sluggish manner in which the circulation is carried on. Thus we get a congestion of all the abdominal viscera, which shows itself in a deficient secretion of the liver, the stomach, the pancreas, and the bowels, and in the presence of albumin in the urine. The *raison d'être* of the treatment is forcibly shown here. The passive congestion just mentioned offers a considerable resistance to the flow of blood towards the heart, thus rendering the backward pressure extremely felt by an enfeebled organ. An improvement is brought about indirectly by acting on the muscular and respiratory systems, as I have already endeavoured to show, and directly by stimulating and kneading the abdominal viscera through the abdominal walls. *Ubi stimulus ibi afluxus*, or wherever there is a demand for energy thither does the blood flow. The circulation in the abdominal viscera becomes roused, there is a demand for fresh blood, the used-up blood is moved on, greater activity takes place in the various abdominal organs, and the bowels, the liver, the stomach, and the kidneys take on a healthier physiological action.

When writing a movement prescription, then, attention should be directed towards these three systems and a typical prescription would be very much as follows: (1) Arm exercises, (2) respiratory exercise, (3) leg exercises, (4) respiratory exercise, (5) trunk exercises, (6) kneading of the abdominal viscera, (7) respiratory exercise. During the performance of the exercises—which should be given slowly—the pulse should be carefully watched, as should also the patient's respirations, for the slightest evidence of distress, either cardiac or respiratory, must be taken as an indication that a certain exercise may be too strong or unsuitable. It is well that the patient should rest in the most comfortable position for an hour after each treatment, which should occupy about half an hour each time.

Let me, in conclusion, urge members of the medical profession to take up this treatment personally, instead of leaving it in the hands of nurses and assistants. It is becoming more and more recognised what a powerful therapeutic agent for good or evil this treatment is, not only in heart disease, but in many chronic complaints, and it is but right that it should be in the hands of the profession. Then, and then only, will it take its due place in the long list of the various methods of treatment.—I am, Sirs, yours faithfully,

OTTO HOLST, M.R.C.S. Eng., L.R.C.P. Lond.

Eastbourne, April 28th, 1902.

OPERATION FOR SUSPECTED STONE IN THE KIDNEY.

To the Editors of THE LANCET.

SIRS,—In reading the interesting series of cases of Operation for Suspected Stone in the Kidney and the clinical remarks on them published by Mr. Edmund Owen in THE LANCET of April 19th, p. 1105, I am reminded of a case that was under my care in the York County Hospital in 1900.

The patient was a man, about 30 years of age, who for some time before I saw him had been suffering from pain over the right kidney with frequent attacks of hæmaturia and had also passed several small pieces of uric acid calculi. As the pain increased in severity and frequency I cut down upon the right kidney, turned it out, and punctured it in five or six places, but I failed to detect any stone. The kidney was replaced; the wound healed up and since then the patient has been entirely free from pain and hæmaturia. He is now in the South of England and I heard of him a few weeks ago, the report being to the effect that he had been entirely free from all his old symptoms since the operation, that he had put on flesh, and that he felt better than he had done for years. Is it possible that the various punctures may have relieved tension and so produced amelioration of his symptoms?

I am, Sirs, yours faithfully,

WILLIAM H. JALLAND, F.R.C.S. Eng.

York, April 22nd, 1902.

To the Editors of THE LANCET.

SIRS,—Few surgeons will, I think, dissent from the views so ably expressed by Mr. E. Owen in your issue of April 19th, p. 1105. It seems, however, unnecessary to refuse assistance from the x rays through fear of one's judgment being unduly influenced. In a woman on whom I operated a fortnight ago the only indications of calculus were persistent pain in the left loin, from which she had suffered daily for four years, and the occasional presence of a trace of albumin in the urine. A series of excellent radiographs taken by Mr. W. J. D. Bromley, the senior house surgeon at the Lancaster Royal Infirmary, utterly failed to indicate the presence of a stone; yet from the pelvis of this kidney I removed an *oxalate* calculus weighing 48 grains.

The two cases first mentioned by Mr. Owen seem to present little difficulty in diagnosis. Both the subjects were young men who suffered from typical attacks of renal colic accompanied by albuminuria. The only reasonable ground of doubt appears to have been the absence of hæmaturia.

Blood is often absent from the urine in these cases and, moreover, is often overlooked when present. One of my former teachers used to advise his patients to patronise a certain line of omnibuses which were famed for their rigid springs and also for the rugged roads that they traversed. After this he had the urine which was passed during the following 24 hours collected in a conical vessel. An examination of the deposit very rarely failed to detect blood-cells. I believe that attacks of "colic" are only present in a minority of cases of stone in the kidney. In many the pain is constant and although subject to exacerbations—which, however, are not paroxysmal in nature—is unaccompanied by sickness or hæmaturia. Increased frequency of micturition is common, but as it also occurs in many other conditions is not of great value as a diagnostic sign. Any reaction to Mr. Jordan Lloyd's test is in my experience exceptional.

And now as regards two points in the technique of the operation. We are frequently told that it is advisable to plug the wound in the kidney. I fancy that most surgeons have now discarded this practice. The kidney substance is best brought together by mattress sutures. No urine exudes and no drainage either of the kidney or the outer wound is required. In reference to the site of the incision into the kidney the experience of those who have used that advocated by Brödel would be of great value. I used it in a recent case but cannot say that I noticed any marked diminution in the amount of bleeding.

I am, Sirs, yours faithfully,

Lancaster, April 21st, 1902. A. STANLEY BARLING.

THE ROYAL NAVY MEDICAL SERVICE.

To the Editors of THE LANCET.

SIRS,—In the regulations in connexion with the above recently issued by the Admiralty it is stated that early promotion to the rank of staff-surgeon may be granted to those surgeons who before entry held the post of house surgeon to a civil hospital. Would it not be better that a naval surgeon should be allowed to hold a house surgeoncy for six months at his hospital at any time within 12 months of his entering the service, provided he could obtain nomination for such a post, his time and pay counting during such house surgeoncy? At present candidates are deterred from seeking the post of house surgeon before entering the service on account of the loss of time and seniority it would entail. If they were to be permitted to hold such a post after entering it would be for the benefit of the service and would induce the best class of men to join. The candidate who takes his house surgeoncy before entry will always run the risk of finding himself junior in the service to his junior in experience.

There is a further rule requiring naval surgeons to undergo a post-graduate course of three months' duration at a metropolitan hospital once in every eight years, receiving full pay, lodging, and provision allowance, &c., but being required to pay himself the necessary fees for such a course. The rule concludes by stating that the officer will be required to produce separate certificates of efficient attendance in the following: (1) medical and surgical practice of a hospital, (2) a course of operative surgery on the dead body, (3) a course of bacteriology, (4) a course of ophthalmic surgery, and (5) a practical course of skiagraphy. The fee for this course, 33 guineas, is a severe tax.

Ought it not rather to be required that the naval surgeon should put in a three or six months' course quite free of all expense at least once in every six years, or preferably once in every three years—i.e., at the end of each commission? Should he not also be encouraged to take higher qualifications? A course of six months' study of State medicine would be of the greatest value in the service, and a surgeon who was willing to qualify and take the diploma in Public Health should, I think, be considered eligible for special promotion quite as much as a surgeon who has been fortunate enough to hold the post of house surgeon. As matters stand at present as warden of a medical college I am obliged to advise candidates for the Naval Medical Service to enter the service as early as possible and without seeking to hold house appointments, but if the suggestions I have made were adopted the candidates could enter just as early and prove far more valuable men in the end.

I am, Sirs, yours faithfully,

MUNRO SCOTT,

April 30th, 1902. Warden of the London Hospital Medical College.

SMALL-POX ON THE RIVIERA.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

A Bad Season.—The Efficacy of Revaccination at Nice.—Small-pox and the British and American Colony.

THE Riviera winter season which has just concluded has proved disastrous in some places and nowhere is it qualified as a good season, although, as usual, the Principality of Monaco is the last to be affected by any evil circumstances that may arise. Indeed, the hotels, in spite of their numbers, have been well filled; and early in March, when I arrived at Monaco, it was with some difficulty that I could secure a suitable room. Now, of course, the great bulk of visitors have left and this is the moment when all concerned have time to pause and to consider the situation.

There are two principal causes that have produced the unfavourable result—namely, small-pox and the war. No explanation is necessary to show that the war has compelled many British families and tourists to postpone the pleasure and the expense of wintering in the south. This is an unhappy circumstance over which local enterprise and the municipalities of the Riviera resorts had no control. The same cannot be said with regard to the prevalence of small-pox. Ever since British visitors have frequented the Riviera and English papers have published descriptions of the various attractions of this favoured coast, protests have been uttered against the want of proper sanitation and efficient drainage. As a consequence there have been various improvements effected; but more remains to be done than has actually been achieved. In one respect especially there has been the most reprehensible neglect and that is in regard to the provision of isolation hospitals for infectious cases. This great grievance was rendered distressingly obvious during this winter's season by the prevalence of small-pox. Nothing can be more alarming and painful than the position of a person away from home and country and stricken down by small-pox while staying in an hotel. In England a stranger would be removed in a proper ambulance by well-trained attendants to the fever or small-pox hospital where he would find the best sanitary conditions, medical attendance, and highly trained nurses. The room in his hotel would be thoroughly disinfected and the risk incurred by the other inhabitants of the hotel would be reduced to a minimum. If, on the Riviera, the authorities insist on removing the patient they can only take him to the general hospital where he will be nursed by untrained sisters who know more about proselytising than about nursing and he will be a source of danger to the other patients. If he is allowed to remain in the hotel he endangers his fellow residents and is not in suitable surroundings for efficient treatment.

In such circumstances it is not surprising that the fear of small-pox has kept many intending visitors away from the Riviera. That it should have this effect is so obvious that the authorities concerned have done their best to conceal the fact that small-pox cases have occurred in several of the winter resorts. But the policy of concealment always defeats its own ends. Absolute concealment is impossible and the absence of official information naturally gives rise to exaggerated rumours. Thus, we find in the *New Free Press* of Vienna a statement that there were during the season from 400 to 500 deaths from small-pox at Nice. This is undoubtedly an exaggeration. A few cases of small-pox occurred at Nice during the month of November, but it was not till Dec. 14th that several cases were notified on one and the same day, and the disease may then be said to have assumed an epidemic aspect. The disease was exceptionally virulent: the proportion of mortality was equal to about 32 per cent. of the cases. But this outbreak has in any case served one good purpose, for it has once more demonstrated the efficacy of vaccination. It may also be claimed that it has not been unconnected with economic and insanitary conditions. Dr. Balestre, director of the Bureau d'Hygiène of Nice, informs me that the inhabitants of the old town suffered most. He visited the two worst streets and the poverty, overcrowding, and filth prevailing there were beyond all description. The tall houses in these narrow, winding, steep, and picturesque streets have simply no sanitary accommodation at all. In the streets there are some gratuitous latrines but there are no closets in the houses. The inhabitants, for the most part very poor Italian labourers,

empty out all their household refuse and soil into the streets. As there are no compulsory means of enforcing vaccination it is easy to understand how quickly small-pox may spread in such localities. On the other hand, where it has been possible to enforce vaccination, its beneficent effect, even in the presence of bad sanitation, has been most conclusively demonstrated. To make matters worse the inhabitants did all they could to conceal the cases which occurred among them and the presence of small-pox was often only known after a death had occurred. These poor Italians object to see a medical man and are still more opposed to the prospect of being removed to the hospital. But the soldiers belonging to the garrison of Nice often associate with these poor people and frequent the localities where they live. Every soldier is vaccinated; and, if there is no result, he is again vaccinated three times consecutively and then only is he judged to be immune. The garrison at Nice this winter amounted to about 3800 soldiers and there has not been one single case of small-pox among them. If, however, are added to the garrison all those who are employed by the public municipal or departmental administrations, the State tobacco manufactory, and the railway and tramway companies, we find a grand total of about 10,000 persons who have now all been revaccinated. Among these 10,000 people there were 14 cases of small-pox previously to vaccination and two other persons who had avoided being revaccinated had small-pox.

With respect to the well-to-do classes and the visitors to Nice there has been the same immunity from small-pox among those who had been revaccinated. But it would be a mistake, according to Dr. Balestre's opinion, to consider such immunity as absolute. To his personal knowledge there have been a few cases among people who were successfully revaccinated. On the other hand, though this has been a most virulent epidemic such cases among the revaccinated were of the mildest type and the patients all promptly recovered. Among his private patients Dr. Balestre noticed that in well-to-do families small-pox attacked the one member who had not been revaccinated while it spared all the others. Dr. Balestre is tempted to believe that the force of infection varies according to the virulence of the disease and that vaccination is not so efficacious when the disease prevalent is of the worst type. This may explain why a few persons who were revaccinated nevertheless contracted small-pox. It is true that they only suffered slightly but had the disease prevalent been of a milder character it is probable that they would not have suffered at all. Whatever may be the value of this conjecture, Dr. Balestre, as chief of the Bureau d'Hygiène, has had the best opportunity of judging and therefore I need make no apology for giving his opinion.

I can only find record of six cases of small-pox occurring among the members of the British and American colony at Nice. Some of these cases were, however, very characteristic. Thus in one large household the servants and others were revaccinated with the exception of two brothers. Shortly afterwards one of these brothers contracted small-pox; the other hastened to be vaccinated. Together with all the other members of the household he has escaped from the infection. Another and a particularly dramatic case relates to a lady who was a Christian Scientist. As such she was much opposed to vaccination and had persuaded a young gentleman not to be vaccinated. Hearing of this a lady remarked to her that she hoped that no evil would result from her action. Within a week of this warning the Christian Scientist died from small-pox. The young gentleman, her convert, thereupon once more changed his opinion and is now to be congratulated on having been successfully vaccinated. The third case was that of an old gentleman who lived so isolated a life in his villa, only going out in his own carriage, that he thought he was quite safe. He would have been better protected by vaccination, for he contracted small-pox in spite of his isolation. Altogether, of the six British and American visitors who contracted small-pox two died and none of them had been revaccinated.

One more incident may be mentioned as illustrating the efficacy of revaccination. There is at Nice an almshouse which contains 350 inmates. They were all revaccinated except half a dozen bedridden and aged persons. None of the latter were under 70 years of age and it was not thought necessary that they should be revaccinated. Nevertheless, one of these patients—he was 80 years old—contracted small-pox. This was the only case that occurred among the 350 occupants of the almshouse. In face of this experience age is no longer accepted as an excuse and many very aged persons have now been successfully revaccinated.

Undoubtedly of the winter resorts Nice has suffered most from the present visitation of small-pox but there have been cases in nearly all the other towns and even in one of the very best hotels at Monte Carlo. With proper methods and facilities for isolation such occurrences need not have caused alarm. It is not as if small-pox had prevailed only on the Riviera. The reverse is the case, and the Riviera has only suffered from the reflex influence of what is occurring in many other parts of Europe. But until a proper isolation service is organised throughout the Riviera the health resorts will continue to suffer from what are sometimes unjustifiable panics and often exaggerated alarms.

Nice, April 26th.

THE GERMAN SURGICAL CONGRESS.

(FROM OUR BERLIN CORRESPONDENT.)

THE thirty-first Congress of the German Surgical Association met in Berlin on April 2nd, Professor KOCHER (Berne, Switzerland) being in the chair. The great hall of Langenbeck House was overcrowded, the number of the members having increased from 130 in 1872 to nearly 1300 in 1902, of whom 659 were present, so that many had to find accommodation in the galleries. A remarkable fact was the relatively large proportion of foreign members, especially Dutch, Scandinavian, and Russian. France was represented by Dr. Doyen who spoke several times during the congress, and Great Britain was represented by Mr. W. Arbuthnot Lane. Professor Kocher in his inaugural address mentioned the members of the association who had died during last year, making especial reference to Staff Surgeon-General Dr. von Coler, to Professor Julius Wolff, well known as an orthopædist, to Dr. Schuchardt, to Dr. Langenbuch, and to Sir William Mac Cormac. The association then unanimously agreed to the election as honorary members of the following gentlemen, whose names were proposed by the committee: Professor von Bergmann and Professor König of Berlin, Professor Guyon of Paris, Professor William Macewen of Glasgow, Professor Keen of Philadelphia, and Professor Durante of Rome.

Military Surgery.

The first meeting was devoted to a discussion on the dressing of wounds on the battle-field, especially in the light of the experience gained during the present war in South Africa.

Professor VON BRUNS (Tübingen) said that from a bacteriological point of view a bullet-wound must be regarded as infected, for bacteria were present everywhere. During the early years of the antiseptic era military surgeons in the Turco-Russian war tried to apply the principle of Lister's method even on the battle-field by carrying out thorough disinfection, drainage, &c. It was the merit of Professor von Bergmann, then in the service of Russia, to have shown that this was practically a failure and that uncomplicated gunshot wounds had a marked tendency to run an aseptic course if they were only covered with an antiseptic dressing to the exclusion of any other procedure. This was still more the case at the present time when the small-calibre bullet produced wounds with a very small aperture of entrance. These principles were also followed in the South African war, the wounds being merely covered with a dressing, and this being done on the British side as early as possible and previously to the removal of the patient from the place where he fell. Professor von Bruns insisted especially on the importance of the latter precaution, as the removal of a wounded man even for a short distance without an adequate dressing was likely to have the worst possible consequences. The early dressing of the wounded on the place where they were found during a battle was a great advantage to them and was, of course, very dangerous to the military surgeon, who had to work sometimes under the fire of the enemy. Professor von Bruns stated that the members of the Royal Army Medical Corps were often to be seen attending to the wounded in positions exposed to the fire of the Boers. Alluding to Count Bülow's words in the German Parliament he said that the Royal Army Medical Corps had thus proved, like the other corps of the

army, that its members knew how to die. Under an early and simple dressing the wounds dried up and healed without suppuration. A crust was formed when a powder like dermatol or xeroform was put on the wound, but impermeable material, such as caoutchouc tissue, protective silk, and the like, were to be avoided because they hindered the wounds from drying. Instead of the powder a dermatol paste might also be used, but bandages were sometimes rather difficult to apply on the battlefield and might be replaced by caoutchouc plaster. Fractures of bones must be immobilised previously to the removal of the wounded man. It was not only the first dressing but also the first removal which, according to the late Professor Volkmann, decided the man's fate.

In the discussion Dr. BERTELSMANN (Hamburg), who had served with the Boers at the siege of Mafeking, said that he had seen 52 wounds heal without suppuration. This took place although the hygienic conditions in the Boer camps were far from being satisfactory and the transport and other arrangements were quite unsuitable for their purpose. In his opinion the good results were obtained because the wounds were scarcely touched by the finger or by an instrument; he only applied some gauze and fixed it by adhesive plaster. Perhaps it was due to the dryness of the South African atmosphere that the wounds healed well under a crust of dried blood.

Professor KÜTTNER (Tübingen), who had been with the German Red Cross Ambulance in the South African war, as well as in the Turco-Greek war and in the China expedition, was of opinion that climatic conditions had but little influence on wounds, as he had obtained the same results in countries far removed from one another, provided that the aseptic and conservative method was used and the wounds were touched as little as possible. In this way the wounds produced by the modern rifle when uncomplicated healed very well and much better than did those inflicted by the bullets of the large-bore rifles formerly used. Of all his bullet wounds only 12 per cent. suppurated and of the shell wounds 40 per cent.

Dr. HILDEBRANDT, one of the medical officers of the German Red Cross Ambulance with the Boers, spoke on the treatment of abdominal wounds. There was at present a marked tendency to abstain from laparotomy in these cases because they were believed to have the best chance of recovery when they were left alone, but this was in Dr. Hildebrandt's opinion erroneous, for the mortality was still at the rate of 70 per cent. Men who after two or three days had come to the field hospitals without complications generally recovered without operation, but when perforation of the intestines had led to peritonitis operation at that stage was nearly always unavailing. If, therefore, perforation of the intestines were known to exist laparotomy and suture of the intestine might be performed at once, even at the dressing station of the field ambulance at the front; notwithstanding the contrary opinion of other military surgeons, and especially of the late Sir William Mac Cormac, he thought that these operations were justifiable.

Professor TRENDELENBURG (Leipsic) showed a patient whose heart had been entered by a bullet and who had been conveyed to the hospital in a state of severe shock but without hæmorrhage into the pericardial or pleural cavity. It was a striking spectacle when by means of the Roentgen rays the bullet was seen moving freely within the ventricle; at present the bullet was adherent to the cardiac walls and only moved in unison with the cardiac movements. The patient was now in good health and he complained of nothing.

Treatment of Fractures.

Dr. NÖLKER (Heidelberg) recommended the suture of the fragments in certain cases, namely, in compound fractures, in fractures of both bones of the same limb—for instance, the tibia and fibula—and in fractures where the displacement of the fragments rendered exact apposition impossible. The dangers of suture after the injury were not very great, especially when only one bone was broken; in bones covered by thick layers of soft tissue, such as the femur, or in the neighbourhood of joints, the operation was more complicated and therefore not without risks. Sutured bones healed somewhat slowly because the development of callus was not assisted as in other cases by the mutual friction of the fragments.

Mr. ARBUTHNOT LANE gave an account of about 150 fractures in which the fragments had been sutured by him. He recommended the use of silver wire.

An animated discussion took place with respect to the methods to be followed, the time of operation, and the material to be used. Some surgeons recommended that the fragments should be secured with nails or screws.

Professor SCHEDE (Hamburg) used ivory pegs which were left in the wound.

Professor SCHLANGE (Hanover) uttered a warning against operating without proper indications. In the majority of cases fractures did not require operation but united under treatment by extension and fixation, which must continue to be the normal procedure. Suture was, however, sometimes indispensable, as in the so-called spiral fractures, in fractures of the tibia, and in fractures in the neighbourhood of the joints. Professor Schlange had obtained good results with aluminium-bronze wire.

(To be continued.)

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

An Epidemic of Dengue Fever in Rangoon.—A Petition from the Bombay Medical Union.—The Plague Epidemic.

IT is reported that after an absence of about 30 years dengue fever has appeared in Rangoon and has spread rapidly. The disease is very contagious, several cases occurring in the same house. It is said to have been prevalent of late in Penang and Singapore, so that it has probably been brought from the Straits.

The Bombay Medical Union has submitted a petition to the Viceroy in which it is urged that whereas the Government has in the past refused to appoint Indian medical men to the public service unless they had passed a special competitive test, several medical officers brought out for plague duty have now been posted to the Indian Medical Service without competitive examination; the Bombay Medical Union prays that Government will consider the claims of graduates of Indian universities and of other natives to appointments in the Indian Medical Service and will also increase the number of civil surgeoncies allotted to civil assistant surgeons. This is the old question of admitting native medical men without going through the prescribed competitive examination in England. After all, very few of the European plague officers have accepted the commissions offered so that the commissions must be looked upon more as rewards for services rendered rather than as any intention of altering the conditions upon which medical men can enter the service. It is generally acknowledged in the service that it would be very undesirable to relax the conditions now existing except in very special circumstances.

The last returns of plague deaths in India show that the disease is still spreading. There were 26,108 deaths in the week ending March 22nd, as against 25,655 for the previous seven days. The Punjab shows the chief increase—16,829 deaths having been there recorded. In the Bombay Presidency as well as in the Bengal Presidency there was a decline and so also in the Madras Presidency. There were more deaths (932) in Kashmir and also in Karachi city (74). Returns issued later show that the diminution in Calcutta (420) was only temporary—the last week showing a rise again to 550 deaths. Notwithstanding the special precautions to keep plague out of Simla the disease is approaching closer and closer and it will probably be only a short time before the native quarters become invaded. In Bombay city the advance of the outbreak has apparently made a halt as the deaths recorded from plague were only eight more than in the preceding week. The general mortality of this city is very high, the total deaths for the week ending March 27th being 1676, with a rate of 112·30 per mille. As there is very little cholera or small-pox or other epidemic disease in Bombay the high mortality suggests that there must be more plague deaths than are accounted for. This, however, has been the statistical history since the plague first appeared in 1896.

April 3rd.

The Plague Epidemic.—Medical Reform Before the Universities Commission.

The high plague mortality throughout India continues. This week there have been registered 23,286 deaths, as against 23,836 during the previous seven days. There has been an increase in Bombay city (957 against 816), in Karachi (128 against 70), in Calcutta (689 against 550), and

in Kashmir (262 against 216); but a decline in the Madras Presidency (93 against 125), in Bengal (1256 against 1777), and in the Punjab (14,871 against 16,675). The great development in the last province has probably reached its height and the outbreak will now decline. The mortality in Bombay city is still on the up grade, as 1902 deaths—a rate of 127·45—were recorded for the week ending April 2nd. As the plague mortality is returned at 999 this leaves 903 deaths to be accounted for. These figures are about 300 in excess of the normal. Calcutta city has more than double its usual mortality but the excess is accounted for by the Plague Department, and except for plague the mortality would not be excessive. Almost every week we read of extension of the disease to fresh districts. It is now spreading among the Hill States.

The subject of medical reform in India has been brought before the Universities Commission now sitting in Calcutta. It is complained that the medical chairs are filled solely by members of the Indian Medical Service and that consequently the field of choice is contracted. As a consequence the teachers are not always the best available and the college professors who act as consultants for their respective Presidencies are not always highly proficient. Further, the change of professors, or the change of subjects which one professor has successively to take up, prevents the proper study of any one subject. It is suggested, therefore, that these chairs should be thrown open as is done in Great Britain. It was also complained that there was so little incentive for original research and it was suggested that regular medical research ought to be a part of the work of the university.

During the absence on six months leave of Mr. J. Nield Cook the duties of medical officer of Calcutta will be carried on by Dr. T. Frederick Pearse who has acted previously in the same capacity.

April 10th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Lying-in Charity.

THE Birmingham Lying-in Charity dates far back into the pre-antiseptic era. Some 40 years ago, owing to the mortality among the in-patients, the building used as the hospital was given up and the work of the charity was limited to the attendance upon patients in their own homes. The annual report, which was read before a meeting of the governors on April 15th, showed that during the past year 925 cases had been attended without the death of a mother and the charity was stated to be doing a valuable work unobtrusively and economically. The report of the Medical Committee drew attention to the necessity of important changes being made in the alliministration of the charity. It pointed out that the time has come for the extension of the area of usefulness of the charity and it emphasised the desirability of providing a central home in which not only serious cases, or those requiring operative treatment, could be admitted but where also nurses could be trained under suitable superintendence and effective teaching could be given in the knowledge and practice of midwifery. The report was favourably received and adopted; it is hoped, therefore, that extensive additions will be made in this valuable department of the charity.

The Small-pox Epidemic.

The public mind is far from easy upon the question of the spread of small-pox in our midst. At present there does not appear to be sufficient ground for apprehension on account of the number of cases arising. The Health Committee is actively isolating suspected and infected patients. At this time there are 10 cases in the isolation hospital and every precaution is taken to obtain early notification and removal. Individual cases occurring in neighbouring towns add to the fear that the epidemic may be insidiously spreading, patients—generally of the tramp class—having been located at Walsall and Tamworth. Meanwhile the effect is to induce a large number of people to be revaccinated as a safeguard against infection.

The Spread of Diphtheria.

An association known as the Birmingham Sanitary Council appointed a deputation which waited upon the Health Committee of the Town Council on April 23rd to set forth its views upon this subject. It was pointed out that Birmingham does not provide special isolation wards for diphtheria patients or for patients in whom that disease is complicating others and that many large towns were already in possession of suitable accommodation for such cases. The chairman of the Health Committee promised that the question should receive consideration, but he stated that the committee had its hands full at present and that the tax upon its hospital accommodation was very severe. It should be borne in mind that although there are no diphtheria wards the Health Committee is doing what it can in other directions to check the spread of the disease. For instance, an arrangement has been made with the bacteriological department of the University to conduct examinations of the sputa of patients supposed to be suffering from this disease as a means of diagnosis. Recently also similar arrangements have been concluded for re-examination so as to give an assurance of recovery and freedom from the disease. So well has this been carried out that at many of the principal schools a pupil after suffering from diphtheria is not allowed to return until a certificate is produced stating that a bacteriological examination shows that he is absolutely free from the disease.

The First Horse Ambulance.

The first horse ambulance ordered by the corporation for the use of the city arrived on April 18th. Internally the fittings consist of two removeable stretchers supported one above the other. There is a space for an attendant and the lower stretcher has an adjustment for raising or lowering one end in order that the injured person may have the minimum of discomfort when the vehicle is ascending or descending a hill. A supply of splints for fractures is provided in racks at the sides and the usual surgical dressings are contained in boxes placed in the front of the van. As compared with present appliances this is a great improvement. No doubt others will be placed in various positions in the city, thus providing a very efficient aid to meet emergencies.

April 29th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Delamere Sanatorium: Annual Report of the Consumption Hospital.

THE number of applications for admission to the Delamere Sanatorium, which is in connexion with the Consumption Hospital, during the past year far exceeded the accommodation and the committee had to refuse admission to many applicants who would probably have benefited by treatment at the sanatorium. The actual cost of building and furnishing the sanatorium was £15,295. In addition to the main building four bungalows to accommodate 16 patients were erected and furnished, as well as shelters and seats in different parts of the grounds. £2800 were received during the year as special donations to the sanatorium. Now that the sanatorium was in full working order the committee was considering the re-construction of the Mount Pleasant Hospital in accordance with the resolution adopted at the annual meeting on March 27th, 1899. The number of in-door patients treated at the Consumption Hospital on Mount Pleasant during the year was 218. In the out-door department there were 1984, whilst the total number of attendances reached 16,291. Out of 47 cases treated at the sanatorium there had been only one death, whilst 74 per cent. of the cases had been cured and 20 per cent. showed no improvement. Mr. Charles Threlfall had subscribed £1000 for the endowment of a bed at the sanatorium. Sir William Tate had also given £500 for the same purpose, together with an annual subscription of £21.

New Appointment for Major Ronald Ross, F.R.S., late I.M.S.

Major Ronald Ross, the Walter Myers lecturer at the Liverpool School of Tropical Medicine, has accepted an appointment at the Jenner Institute of Preventive Medicine in London. Major Ross's departure from Liverpool will be regretted much by his numerous friends. His name always will be associated with the expeditions despatched to the West Coast of Africa by the Liverpool School of Tropical Medicine in connexion with the investigation of malaria and the mosquito theory.

The Proposed Liverpool University.

On April 25th the finance committee of the city council

passed a resolution recommending the council to present a petition to the King in council praying for the granting of a charter for the foundation of a university for Liverpool. £157,000 have been already subscribed towards the £330,000 required for endowments in aid of the proposed university.

The New Local Fellows of the Royal College of Physicians of London

Dr. James Barr, honorary physician to the Liverpool Royal Infirmary, and Dr. A. F. S. Grünbaum have been elected Fellows of the Royal College of Physicians of London.

Donations to Local Charities.

By the terms of the will of the late Mr. James Barrow of Waterloo the Liverpool Royal Infirmary and the David Lewis Northern Hospital each receive £500; and the Royal Southern Hospital, the Stanley Hospital, the Bootle Borough Hospital, the Children's Infirmary, and the convalescent home at Woolton, each receive £250.—The honorary treasurer of the Bootle Borough Hospital has received from the trustees of the late Miss Olivia Atherton a cheque for £500 for the endowment fund of the hospital. The Liverpool Country Hospital for the Chronic Diseases of Children also receives £1000 by the will of the late Miss Olivia Atherton.

April 29th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

University of Durham.

A CONVOCATION of the University of Durham was held on April 26th in the Library of the College of Medicine, Newcastle-upon-Tyne. The Warden of the University, Dean Kitchin, presided. The principal matter of interest in the proceedings to medical men was the conferring of the degree of Doctor of Civil Law upon Sir William Selby Church, Bart., President of the Royal College of Physicians of London, and upon Professor Thomas Annandale, Regius Professor of Clinical Surgery in the University of Edinburgh.

Annual Report of the Newcastle-upon-Tyne Royal Infirmary.

The 151st report of the Newcastle Royal Infirmary has just been published and it shows that the amount of work done by this excellent institution continues to increase. The number of patients admitted during the year was 4559, being an increase of 301 on the number for the previous year, while the number of out-patients and casuals amounted to 43,381, making 47,940 in all. The total ordinary income for the year amounted to £13,544 4*s.* 9*d.*, which included no less a sum than £5530 11*s.* 7*d.* subscribed by the working men, while the expenditure for the year was £17,505 4*s.* 3*d.* 3258 operations were performed during the year; of these, 111 were for appendicitis with 17 deaths and 184 were for the radical cure of hernia with only two deaths. The report says: "It is with a profound feeling of satisfaction that the committee report that at last the work of building the new infirmary has commenced," but the feeling of public satisfaction will be even more profound when they have to report that the work of building has been completed.

Death of Charles P. G. Crichton, M.B., B.Ch. Glasg., of Chester-le-Street.

The death took place on April 28th, at Chester-le-Street, Durham, of Dr. Crichton, one of the assistants of Dr. W. H. Renton. The deceased, who was not quite 30 years of age, took a chill about a week ago which developed into pneumonia, to which he succumbed. He came from Glasgow and he showed such skill and tact in his profession that in the few months he was at Chester-le-Street he gathered round him a considerable circle of friends. He was known and respected as one of the hardest workers among professional men in the district. The deceased was unmarried.

Health of South Shields.

Dr. J. J. Boyd, medical officer of health of South Shields, in his annual report for 1901 points out that the high birth-rate which has characterised the borough for many years is still maintained. Last year it was 36·8 per 1000, as compared with 28·5 for England and Wales. The death-rate was rather high, being 20·6 per 1000, as compared with 16·9 for England and Wales. Infantile mortality was heavy; out of every 1000 children born 169 died before reaching the age of one year. This was mainly due to an epidemic of infantile diarrhœa. Dealing with zymotic diseases Dr. Boyd points out that there were no cases of small-pox in South Shields during last year, although several have occurred since. Scarlet fever, however, prevailed in epidemic form, 1263 cases being notified and 59 deaths being registered. Tuberculosis was responsible for 231 deaths. Not much so far has been done with a view to diminish the ravages of this disease, although a beginning has been made. Whenever a death from phthisis now occurs a letter is sent to the occupier of the premises, pointing out the infectious character of the disease and that the infection becomes attached to all articles used by the patient and to the rooms in which he has been living and the importance of thorough disinfection. The corporation, it is explained, will supply suitable disinfectants, and will send for all carpets, hangings, &c., which will be disinfected by the corporation disinfector. The next step, Dr. Boyd says, would be to adopt some system of notification of cases and to take some practical action against the habit of indiscriminate spitting.

Newcastle-on-Tyne, April 29th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Cardiff Refuse Destructors.

ALTHOUGH Cardiff has been foremost among South Wales towns in other sanitary improvements it has been strangely laggard in the matter of the disposal of refuse. In the adjoining town of Barry a refuse destructor has been installed nearly two years and even in the Rhondda Valley there has been one at work for nearly a year. This latter differs materially from the ordinary form of destructor and is known as Mason's gasifier. It is provided with an iron chimney only 40 feet high and there are absolutely no offensive fumes given off. For more than six years members of the Cardiff Corporation have been examining and reporting upon destructors of various types in other towns and a recommendation has now been made to erect two destructors of eight cells each capable of dealing with 1200 tons of refuse weekly at an estimated cost of £61,500. At the present time there are 1800 tons collected in the town each week and this is all deposited in various tips on the outskirts of the borough. The types of destructor recommended for erection are those of Messrs. Meldrums and of Messrs. Hughes and Sterling.

Pauperism in Cardiff.

At the meeting of the Cardiff Board of Guardians, held on April 28th, the Poor-law inspector of the Local Government Board (Mr. F. T. Bircham) gave some interesting comparative statistics with reference to the extent and cost of pauperism in the Cardiff Union. During the past 10 years he said that the population of England and Wales has increased 12 per cent. and the number of paupers 8 per cent., but the rate of pauperism has decreased 19 per cent., while there has been an increase in expenditure of 22 per cent. In the Cardiff Union during the same period the population has increased 31 per cent., the number of paupers 54 per cent., and in the rate of pauperism there has been an increase of 10 per cent., with an increased expenditure of 54 per cent. This increase in the expenditure is due to more adequate remuneration to the officers, to increased accommodation for the inmates, and to improvements in the nursing arrangements, as well as to increased amounts given in outdoor relief. Mr. Bircham emphasised the importance of paying very particular attention to every application for outdoor relief, for which purpose alone the Cardiff Board of Guardians distributes £400 weekly.

Small-pox.

There has been a recrudescence of the epidemic of small-pox in Swansea where there are now in the hospital 10 cases of the disease. Hitherto the patients have come from a restricted area but the last was from a more remote district. At Aberdare there is one case of small-pox and this patient has infected a collier in the Rhondda Valley. There has only been one case of small-pox in the latter district during the past 10 years. In the Pontypridd Union, which includes the Rhondda, there are very few unvaccinated children but only a small percentage of the inhabitants are protected by revaccination.

Housing of the Poor in Bristol.

In 1891 the average number of persons per house in Bristol

was six and although in 1901 this average was found to be only 5·6 it is probable that the reduction was due more to the extension of the city boundaries than to any very marked improvement in the crowded parts of the town. Although there are in Bristol no very large unhealthy areas there are still many courts and insanitary dwellings which must prejudicially affect the health of the inhabitants and it is to these that the Committee for Promoting the Better Housing of the Poor turns its attention. The annual meeting of the committee was held on April 25th when the President, Mr. Lewis Fry, commented favourably upon the work accomplished during the past year. Mr. Fry deprecated the adoption by municipal authorities of extensive housing schemes as likely to stifle private enterprise and he advocated greater facilities for taking working men rapidly to and from their work. It appears that many of the insanitary dwellings which the committee desire to see abolished are built in groups of four or eight upon land which was formerly the garden of a house facing the street and accessible only through the street-door of that house. As the surrounding property is often very valuable it is almost impossible to clear an area and the houses can only be dealt with effectually piecemeal.

Death of Alfred Rickards Smith, M.D., L.R.C.S. Edin.

Through the death on April 20th of Dr. A. R. Smith the medical profession in Hereford has lost one of its oldest and most valued members. Dr. Smith was born in Hereford in the year 1833 and received his early education at the Cathedral School, afterwards proceeding to Edinburgh University, where in 1858 he obtained the gold medal in anatomy and took the M.D. degree in 1861, being admitted a Licentiate of the Royal College of Surgeons of Edinburgh in the same year. Shortly after qualifying he began practice in Hereford and in 1872 was elected on the staff of the Herefordshire Infirmary. At the time of his death he was consulting physician to that institution and held a similar position in connexion with the Herefordshire Dispensary. During the past few years he had gradually dropped out of practice except in the capacity of consultant. Although of a retiring disposition and by no means self-assertive there is no doubt that the high character of Dr. Smith and his strict observance of the dictates of medical etiquette have left their mark upon professional life in Hereford. He was a musician of considerable ability and frequently acted as organist at one of the city churches. He leaves a widow and one daughter.

A Warning to "Conscientious Objectors" to Vaccination.

At the Cheltenham police-court on April 17th three defaulters were summoned under the Vaccination Act. Evidence showed that they had previously satisfied the magistrates of their conscientious objection to vaccination but had refused to pay the fee of 1*s.* 6*d.* due for each certificate, and consequently did not receive the certificates within the required seven days. For the defence it was contended that the defendants had acted under a *bonâ-fide* misapprehension of the magistrates' power to order the payment of this fee and they asked the bench to exercise their discretion and now grant the exemption. To this course the magistrates assented, though intimating that the action must not be taken as a precedent now that the law was established.

Queen Victoria Jubilee Convalescent Home, Bristol.

The second annual report of this institution which has just been issued shows that 1015 patients were admitted during 1901; of these, 12 were returned to their homes as unsuitable cases, 35 were discharged unimproved, and the remaining 968 derived considerable benefit from their stay at the home. The financial statement was satisfactory and showed that the total expenditure for the year amounted to £2299 and that a favourable balance of £39 remained.

April 28th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Prevention of Consumption in Ulster.

AN interesting letter from the honorary secretary of the Ulster Branch of the National Association for the Prevention of Consumption appeared in the *Irish Times* of April 29th, in which it was shown that although the mortality from consumption in Ulster and Leinster is higher than that in any other districts in the United Kingdom—the death-rate being three times as high as in high parts of England—no steps have been taken to lessen the prevalence of the disease. The letter describes the measures adopted for this purpose on the Continent, in the United States, and in many English towns, such as Liverpool and Manchester, and contrasts the scientific precautions which have succeeded in New York in lowering the death-rate from consumption during the last five years by 35 per cent. with the deplorable apathy in this regard which still prevails in Ulster.

The Case of Small-pox in Belfast.

The Belfast Poor-law Guardians having protested in reference to a man with small-pox being sent from the jail (in which there was a good infirmary), where there were 500 inhabitants, to the workhouse, where there were 3500 inmates, the Secretary of the Local Government Board has replied enclosing a letter from the General Prisons Board, Dublin Castle, to the effect that the prisoner's release from prison took place on March 13th, and that as he was then suffering from small-pox it would obviously have been improper to allow him to return home. It turns out that this is hardly a full and accurate statement, as the man was arrested in Glasgow on Feb. 26th on a charge of bigamy, and conveyed to Belfast, arriving there on the morning of the 28th. On that date he was brought before the court and remanded to jail until March 6th, when he was again remanded for a week. On the 13th he was unable to attend the court and on that day he was ordered by the Lord Lieutenant to be removed from Belfast Jail to hospital, as he was suffering from small-pox. The guardians have decided to let the Local Government Board know the real facts of the case and they will decline in future to receive such a case, there being ample accommodation, in their opinion, in the jail infirmary, or the patient can be sent to the wooden isolation huts to be provided by the Public Health Committee of the Corporation at their new fever hospital at Purdysburn, near Belfast.

The Mater Infirmorum Hospital, Belfast.

From the financial statement of this hospital for the year ended Oct. 31st, 1901, it appears that a sum of £4000 has been received from various sources for defraying current expenses and the excess of expenditure over income for the year amounts only to £300, a small deficit indicating the great care exercised in the disbursement of the funds. The last Saturday in May is fixed as the day for the hospital collection in aid of the funds of the Mater Infirmorum Hospital.

Milk Prosecutions.

The adjourned cases of prosecution of Belfast dairymen for having sold milk deficient in fat were before the police-court on April 21st. The city analyst had certified that there was a deficiency of 13·3 per cent. of normal fats; but after hearing the evidence, the resident magistrate dismissed the prosecution on the ground that there was no evidence that there had been any abstraction of fats, the evidence being that the milk was sold just as it had come from the cows. By an order of the Agriculture and Technical Education Department for Ireland, dated August 2nd, 1901, it is provided that where a sample of milk is found deficient in fats there is left upon the dairymen the onus of proving that the milk is genuine. The importance of this magisterial decision is that it is in antagonism to the theory that a standard can be set upon which to judge whether milk is or is not genuine. The evidence showed that the amount of fats and solids which milk contains may vary according to the weather, there being less fat and more solids in cold severe weather than in mild warm weather. In cold weather more fat is consumed to maintain animal heat than in warm weather and so there is less fat in the milk. The milk standard, it would therefore seem, ought to vary according to the state of the thermometer and in a variable climate like Ireland it is difficult to imagine the thermometer setting a standard to anything. In any further prosecutions evidence as to the chemical composition of the milk will be of little avail.

April 29th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Radium as a Means of Sight for the Blind.

AT the meeting of the Academy of Medicine held on April 15th M. Javal showed the meeting that radium, the metal discovered by M. Curie, possesses the singular quality

of continuously emitting rays of a kind similar to kathodal rays or the rays of Roentgen. M. Giesel has found out that compounds of radium produce a perception of light in the eye even when a screen is interposed between the eye and the radium compound. The screen may be of metal and the whole of the visual field appears full of light. The same sensation of light is felt if a glass tube containing a few centigrammes of radium chloride be pressed against the temple. M. Javal and M. Curie have made some experiments with radium in blind persons. If the retina be healthy they experience a sensation of light exactly comparable to that felt by a "sighted" person. In a patient who was completely blind owing to infantile purulent ophthalmia which had made the cornea quite opaque the light emitted by the radium was distinctly seen. If, then, this patient could have his cornea made transparent he would have good vision.

New Privileges of the Nursing Staff of the Hospitals.

M. Mourier, the Director of the Assistance Publique, has given his adhesion to a proposition laid before the Municipal council by M. Ransom. The proposal is that there should be erected as soon as possible on land belonging to the Assistance Publique a sanatorium of 50 beds for the reception of such nurses, both male and female, who have become infected by tuberculosis during their attendance on the sick. M. Mourier, for his part, said that the Assistance would do everything in its power to carry out the scheme with a due regard both for the interests of the nurses and for the public interests of the Assistance. The Municipal Council has furthermore decided to set aside a small plot of land in the Eastern Cemetery for the interment of those nurses who may die from diseases contracted while nursing the sick. In this way the names of victims to professional duty will be kept in remembrance, as are those of firemen and other municipal workers.

Obituary.

Dr. le Rendu has just died at the age of 58 years from cancer of the stomach. He was a pupil of Potain and had been physician to the hospitals, an *agrégé* professor at the faculty of medicine, a member of the Academy of Medicine, and a Chevalier of the Legion of Honour. He leaves behind him a great reputation as a clinician and a practitioner of the highest honour. He wrote several books on diseases of the heart and of the liver and since 1890 had been general secretary to the Hospitals Medical Society.—The death is announced of M. Filhol, professor of Comparative Anatomy at the Museum. He was 80 years of age and was formerly a professor in the provinces. In 1895 he succeeded to the chair of G. Pouchet at the Museum. He was a Member of the Academy of Medicine and of the Institute (the Academy of Sciences).

Dr. Doyen.

The widespread notice which was taken of the operation for separating Radica and Doodica has given rise to many attacks upon Dr. Doyen. These culminated when Dr. Legrain publicly asserted that Dr. Doyen had allowed kinematograph films of the operation in question to be exhibited in an acrobat's booth and an enormous poster announcing that this was the fact to be exhibited outside the booth. Dr. Doyen thereupon sent his seconds to Dr. Legrain. After the seconds of the two medical men had conferred it came out that Dr. Legrain had made a mistake. The poster actually was fixed to the booth but it was simply to draw the public. Inside there was no kinematograph show nor anything else coming from Dr. Doyen. There were, however, two large wax figures supposed to be Radica and Doodica. Dr. Legrain therefore wrote an apology to Dr. Doyen which has been published in the journals.

April 29th.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

Eyesight of School Children.

DR. ADOLF STEIGER, a well-known ophthalmologist, has just published a full account of the examinations of children's eyesight which he has made at the public schools of Zürich for the last eight years (1894 to 1901). His observations show a defective state of the eyesight in 19·1 per cent. of 19,947 children examined. The percentages of the different diseases of the eye were as follows: hypermetropia, 1·2; myopia, 0·9; astigmatism, 8·6; cramp of the muscle of accommodation, 1·4; strabismus and amblyopia, each 1; maculæ corneæ, 1·3; and various other defects, 1·5. In 2 per cent. of the cases examination was not possible owing to the behaviour of the children (fright, crying, &c.). Dr. Steiger found that an exact ophthalmometric examination of eyes with defective vision was an absolute necessity as it led directly to the discovery of the high percentage of astigmatism which was generally overlooked in the older statistics. The usual primary examination (with a rectilineal figure of the shape E turned in four different positions and not with letters) is now conducted by one of the official town physicians who have the superintendence over all the hygienic affairs of the town pending the appointment of a medical man (*Schularzt*) who is to devote his time exclusively to matters of school hygiene. It is most necessary that these examinations should be made by a medical man and not by the various schoolmasters. 25 per cent. of all the school-children had deficient vision or were doubtful cases and they were sent to Dr. Steiger for special examination one by one accompanied by one of the parents. In this way Dr. Steiger was in a position to give the necessary instructions to the parents and then he sent an official report to the schoolmasters in order to enable them to treat the patients appropriately. He supplied detailed written instructions with regard to the special attention to be paid to each child, such as the distance of the child's seat from the window or from the black board, the use of spectacles, &c. This report has to be added by the schoolmaster or his successor to the official report on the non-attendance of individual children and in this way there is a certainty that the schoolmaster will always remember the instructions given. No doubt this will have practical results. Dr. Steiger merely informs the parents of the defective state of their children's eyes, makes his diagnosis, gives his advice, and refers the patients to the ophthalmologist or the polyclinic of the university. I must mention that the children of rich and poor almost alike attend these schools which cannot be compared with the board schools in England as at least 90 per cent. of all the children of all classes attend these gratuitous State schools where the best of instruction can be obtained. It may, in fact, be said that we are suffering from the effects of over-education rather than otherwise. Examinations of the organs of hearing are also officially conducted by aural surgeons. Such observations not only have a scientific import but will no doubt prove useful to the schoolmasters and beneficial to the children.

Preliminary Education of University Students.

Students in Switzerland have up to the present time been able to enter the universities after having been six years at a public school and having had six and a half years of college education; they are then about 19 years of age. Greek used to be obligatory but may be replaced by a modern language. German and French are absolutely necessary, but the student can choose a minimum of two other languages among Hebrew, Greek, English, and Italian. This system has so far proved very satisfactory, securing a proper classical education and yet having regard to the fact that the study of modern languages is more and more desirable every year. The Federal authorities, however, have suddenly proposed quite a new plan without consulting the proper authorities in exact opposition to the philological opinions obtained. They propose that the college education should be of two kinds or systems—the one strictly classical, with obligatory Greek and Latin, and the other merely "humanistic," in which these languages would be replaced by modern languages. The prospect of students without any knowledge of Latin and Greek being admitted to a university has caused no small stir in the medical profession, and an unofficial poll has been taken for the purpose of ascertaining the state of opinion on the subject, with the result that 1470 medical men in Switzerland answered the questions put to them, and the vast majority—namely, 1302—expressed the view that the present system of classical education is desirable. It is, therefore, to be hoped that these opinions will take the form of an official protest by our new Aerzte Kammer, a committee which is elected by all the medical societies in Switzerland and is empowered to confer with the Government on matters of import to the medical world.

Zürich, April 29th.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

Plague in Egypt in Recent Times.

MANY readers of THE LANCET will remember that plague appeared in Alexandria in April, 1899, and lasted until October, causing 46 deaths out of a total of 96 cases. During that summer two patients who had travelled from Alexandria were discovered at Damanhour, a town one hour's distance by train from Alexandria, but with this exception the disease did not spread outside Alexandria. A second outbreak took place in 1900, when 150 cases occurred, divided between Alexandria where plague existed from April until November and Port Said where the disease began in in April and was stamped out by energetic means in July. There was in addition one case at Damietta which was obviously imported from Port Said. A third recurrence began in April, 1901, which has smouldered gently on in various places ever since. Now that the disease has existed in the country for 12 months it is interesting to recapitulate the various sanitary bulletins which have been accurately published every day by the Sanitary Department. It appears that 382 cases have occurred during the year out of the whole population of 10,000,000 persons. Of these 223 have died, 112 of them dying under treatment in the various Government infectious hospitals, while the remaining 111 have been found dead by the sanitary authorities in their homes. In Alexandria there have been 41 cases, including 24 among Europeans and 17 among natives. At Port Said 21 cases have occurred, comprising seven among Europeans and 14 among Egyptians. At Zagazig the numbers reached the maximum of 67 cases, of which only four were among Europeans. At Tantah there have been 42 cases, including two among Europeans, and at Mit Camr there have been 17 cases, of which three were among Europeans. It must be remembered that the Europeans attacked have invariably belonged to the poorest classes, who lead lives as unhealthy as do the natives and who work with the natives bare-footed, or almost bare-footed. It is also interesting to note that not a single one of the 111 deaths outside the hospital occurred among Europeans. In the following towns and villages not a single European has been attacked: at Kom el Nour in the Dakahlieh province there have been 23 cases, of which seven are still under treatment; at Ziftah seven cases; at Abusir also seven cases in the Gharbieh province; and at Benha in the Galioubieh province there have been 10 cases. Plague has attacked Upper Egypt this winter for the first time for nearly 60 years, for there have been five cases at Minieh and 22 at Deshneh (Keneh). Quite lately a small outbreak has been discovered at Korashieh, a little village to which the infection was carried in February from Tantah to some nomadic Bedouins grouped about the village. Some of their huts were destroyed at the time, but the original case was not recognised as plague, and therefore no special plague precautions were taken. This is an accident which may occur at any time in the outlying districts, though of course all the country doctors have been carefully warned to be on the look-out for the disease. The record for the past week tells something of the usual sanitary measures which have been taken in the places where the disease is present. 20,019 rooms have been disinfected, 8229 rooms have been whitewashed, 14 sacks of clothing have been disinfected, while 958 sacks of rubbish from the interiors of suspected houses have been destroyed. In addition to this quiet work which the sanitary authorities are carrying on every day about 600 rats are killed and burnt each week. The whole world seems to be getting used to hearing of plague in their midst, and there has been very little talk about it in Egypt, and absolutely no alarm among Europeans or natives.

The Cairo Season.

The tourists are hurrying away to Europe as fast as they can after a very successful and healthy season. About 8000 of them have visited Cairo since November, no less than 800 having come in one batch from New York in the *Celtic*. For the last two winters influenza has been almost absent from Egypt though there have been a few sporadic cases among the residents. As regards typhoid fever I have only been able to hear of six cases among the visitors, one of which ended fatally. It is impossible to say where in these six cases the disease was contracted but it is believed that at least two of the patients caught it from drinking water on the steamers which brought them to Egypt. Modern travellers fondly imagine that on a well-appointed steamer they get distilled water to drink, but as a matter of fact most ships take in their water-supply without any regard to cleanliness from ports where the water-supply is known to be bad, such as, among others, Marseilles and Alexandria. Most steamers then filter it through antiquated filters which are probably useless. This is a sanitary question which needs investigation badly.

Cairo, April 14th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Graduation at the Army Medical School.

THE Army Medical School at Washington, D.C., which opened on Nov. 4th, 1901, closed its fifth session on April 4th, 1902, with its graduation exercises in the lecture-hall of the National Museum. Colonel W. H. Forwood, the president of the faculty, explained fully the course of study just completed by the class and announced the name of Assistant-Surgeon James M. Phalen as the member who had received the highest marks, entitling him to the Hoff Memorial Medal. The distinction of honour graduates was won by Assistant-Surgeons Conrad E. Koerper, Roderick P. O'Connor, and Robert U. Patterson, who had passed more than 90 per cent.; the majority of the students had made high percentages and none had fallen below the required rate, 70 per cent. The Secretary for War handed to each of the members of the class the diploma of the school, in the order of his rank in the army, and then the formal address of the occasion was delivered by the Surgeon-General. He emphasised the importance of preventive medicine in military practice and said that the important function of the Army Medical School was to familiarise the student officers with all that was known on this subject, to fit them to give expert advice on all matters relative to the prevention of disease in the ranks of the army serving under various conditions. The subject had become especially important since the Philippines had come into the possession of the United States, as the soldiers were now exposed to various infectious diseases which were either very rare or quite unknown in their own country. Almost every military post now offered facilities for bacteriological and chemical experiment and the members of this class would, it was expected, make the most of their opportunities, not only for the purpose of diagnosis in the patients' interest and of prophylaxis for the benefit of the command to which they belonged, but in the broader field of profit to scientific medicine and humanity in general.

An Experimental Hospital School.

An experiment as to the effect of certain foods upon the physical and mental development of children is now being conducted at the Chicago Hospital School for Nervous and Delicate Children. The main purpose of the research is to formulate if possible a dietary for children of from five to 15 years of age. Foods are prepared according to certain prescribed recipes, and the children are permitted to eat sparingly or generously as they themselves may choose. All foods are analysed before cooking, and later each child is served with carefully weighed portions best suited to his individual tastes, need, and capacity; the uneaten portion is weighed, so as to ascertain accurately the amount of food consumed. Each day the urine and fæces are carefully examined by medical men and the accompanying mental and physical phenomena are carefully watched and daily recorded to show the deviation from the normal. Special teachers and trained nurses make these observations. This school was founded two years ago and it serves as a pathological laboratory for the Chicago University, the only university that has a working pathological laboratory of this sort.

Deaths by Lightning in the United States.

Mr. Alfred J. Henry, professor of meteorology of the Weather Bureau of the United States Department of Agriculture, has published a bulletin relating to this subject. The number of persons killed by lightning during 1900 was 713; of this number 291 were killed in the open, 158 in houses, 57 under trees, and 56 in barns; the circumstances concerning the death of the remaining number are not known. To this may be added the

number injured, which was 973. Professor Henry prepared a paper some time since on the relative frequency of fatalities by lightning in the several States and territories. He then recorded the statistics for a period of three years but thought best not to draw conclusions from them owing to the length of the time covered. In his recent bulletin he states that the number of fatalities must depend partly upon the frequency of the lightning strokes per unit area, also upon the density of the population and the character of the thunderstorms which traverse the region. Thunderstorms occurred with considerable frequency in that part of the United States east of the one-hundredth meridian, excepting a strip along the northern border. West of this section, not including the Rocky Mountains, the frequency of storms steadily diminished, practically reaching zero directly on the Pacific Coast. The largest number of fatalities occurred in the Middle Atlantic States; the Ohio Valley and Tennessee ranked second, and the Middle and Upper Mississippi Valleys filled the third place. During the years 1896–1900 the greatest number of deaths from lightning occurring in any one State were in Pennsylvania, 186; in Ohio, 135; and in Indiana, Illinois, and New York, 124 each. The greatest fatality from any one stroke occurred in Chicago, when 11 persons crowded together in a zinc-lined hut were killed instantly by one bolt.

Advancing the Educational Qualification of Medical Students.

Admission to the first-year class of the College of Physicians and Surgeons, New York City, has been thrown open to any student who complies with the minimum requirements for a medical student's certificate, as defined by the laws of the State of New York. A certificate is issued by the regents to any student applicant who presents 48 academic "counts" chosen from any subjects of secondary school study. The law provides that a student who has obtained 36 of these "counts" may enter upon the study of medicine, having one year in which to make good the remaining "counts." On and after September, 1903, no student will be admitted who has not obtained a medical student's certificate in one of two ways. He must have successfully completed at least one full year's course of study at some college or scientific school in the United States, or have pursued an equivalent course of study at some European institution, the question of the equivalence being determined by the regents of the University of the State of New York. The alternative is presented to the student of passing an entrance examination in June of any year held by the College Entrance Examination Board, or in September of any year held by the Committee on Entrance Examinations of Columbia University, or in part by both of these, provided only that if a portion of the examination be taken in June of any year the entire examination must be completed not later than in September of the following year.

Temperance Instruction in the Public Schools.

The national superintendents of schools in Chicago last year reported that the department of superintendence agrees cordially with the special advocates of the temperance cause in holding that everything that public instruction can do in the battle against intemperance ought to be done and that both physiology and hygiene should be so taught as to leave in the minds of children and youths as adequate and proper a knowledge of the effects of alcoholic drinks, stimulants, and narcotics on the human system as possible. Since the last meeting of this department there has been considerable discussion of the question as to whether alcohol under any conditions is properly to be defined as an article of food. Medical authorities are quoted in support of both sides of this question but no authority has been found to maintain that alcohol is a food in the ordinary sense of that term. The question of the supposed food value of alcohol is a technical one for medical experts to determine and not one which need concern the man or woman who is engaged in the work of public instruction of children and youth. For them it is enough to know that its use as a beverage may be injurious and that all authorities agree in deprecating the formation of the drinking habit.

Mr. Henry Merwin Shrady, son of Dr. George F. Shrady, editor of the *New York Medical Record*, has gained the first award in the competition of models which recently took place in Washington for the purpose of selecting a statue of General Grant to be placed in that city.

April 18th.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen passed the second examination of the Board at the quarterly meeting of the examiners in the subjects indicated:—

Anatomy and Physiology.—Hugh William Acton, Middlesex Hospital; James Elrick Adler and Charles Sydney Archer, London Hospital; Frederic Charles Joseph Baker, St. Mary's Hospital; William Girling Ball, St. Bartholomew's Hospital; Ernest Charles Page Barnes, London Hospital; Hugh George William Beckett, St. Mary's Hospital; Samuel Landor Benton, University College, London; Albert Ogier Bisson, University of Lausanne, Switzerland; Albert Edward Blackburn, Yorkshire College, Leeds; Richard Osmond Bodman, University College, Bristol; John Taylor Bowker, Owens College, Manchester; Rowland Alessandro Bowling and Robert Henry Bott, St. Bartholomew's Hospital; Stanley Bott, London Hospital; James Rynd Briscoe, B.A. Camb., Cambridge University; John Bryan, London Hospital; Arthur Hill Burnett, Royal Colleges of Physicians and Surgeons, Edinburgh; John Graham Castellain, B.A. Cantab., St. George's Hospital; Charles Bazett Deane Butcher and William Rex Collingridge, St. Bartholomew's Hospital; Vivyan Colmer, London Hospital; David Kirkpatrick Coutts and Reginald John Hands Cox, St. Thomas's Hospital; Arthur Douglas Crofts, Guy's Hospital; Claude Harold Cross, St. Bartholomew's Hospital; Frederick Spencer Davies, St. Thomas's Hospital; Langford George Davies, B.A. Cantab., Guy's Hospital; Percival Alfred Dingle, St. Bartholomew's Hospital; Alfred Dinnis, Charing Cross Hospital; Mohammed Omar Dollie, University College, London; Christopher Elliott, St. Bartholomew's Hospital; Trevor Evans, London Hospital; Harold William Farebrother, Charing Cross Hospital; George Edward Ferguson, St. Mary's Hospital; George Finch, Yorkshire College, Leeds; George William Morgan Fletcher, University College, Bristol; John Freeman, B.A Oxon., Oxford University; Colin James Galbraith and Alexander Harold Gifford, King's College Hospital; Leonard Gray and John Purser Griffin, St. Bartholomew's Hospital; George Hamilton, Guy's Hospital; James Clarence Ledeatt Hingston, Middlesex Hospital; Edward Coomber Hobbs and Herbert Stanley Hollis, St. Mary's Hospital; Alfred Wyatt Hooker, St. Thomas's Hospital; Walter Goldie Howarth, B.A. Cantab., Cambridge University and King's College Hospital; James Bonnell Howell, University College, Cardiff; Richard Rossiter Huxtable, Charing Cross Hospital; Francis Samuel Jones, University College, Liverpool; Frederick Harold Lemnox Jones, Guy's Hospital; George Francis Jones, University College, London; Khurseiji Nasserwanji Karanjia, Grant Medical College, Bombay; James Reginald Kemp, St. Bartholomew's Hospital; Charles Frederic Kernot, London Hospital; George Johnson Langley, St. Thomas's Hospital; Arthur Edward Leapingwell and Farquhar Colynin Lloyd, St. Mary's Hospital; William Alfred Thomas Lloyd, London Hospital; Walter St. Claire McClure, Firth College, Sheffield; James Bustace Radclyffe McDonagh, St. Bartholomew's Hospital; Donald Grey MacGill, Owens College, Manchester; Clarence Basil McNeile, Middlesex Hospital; Conwy Llewellyn Morgan, St. Thomas's Hospital; Donald Macrae and John Findon Murphy, London Hospital; John Orrett Musson, Guy's Hospital; Reginald Cavan Nell, University College, London; Lioned Edward Close Norbury, St. Thomas's Hospital; Arthur Boniface O'Brien, Guy's Hospital; Geoffrey Ratcliffe Plaister, London Hospital; Vining Gedny, Joseph Paul, and Wilfred Hill Powell, St. Mary's Hospital; John Edward Prentis and William Percy Purdon, Guy's Hospital; Arthur George Laurence Reade, Charing Cross Hospital; Philip Alfred Reckless, Firth College, Sheffield; Max Balzar Reichwald, St. Bartholomew's Hospital; Vivian Ernest Ridewood, B.A. Lond., London Hospital; Henry Charles Samuel, University College, London; James Donald Sinclair, Edinburgh School of Medicine; Alfred Alexander Smith, Charing Cross Hospital; Armstrong Smith, Middlesex Hospital; Charles Maberley Stevenson, Cambridge University and Guy's Hospital; Thomas Stordy and Harold Foster Strickland, Charing Cross Hospital; James Herbert Sutcliffe, Yorkshire College, Leeds; Richard James Campbell Thompson, St. Thomas's Hospital; James Aubrey Torrens, St. George's Hospital; Harold Sugden Vivian, Middlesex Hospital; Harold Rosser Styleman Walford, St. George's Hospital; John Wallace, B.A. Oxon., Oxford University and St. Thomas's Hospital; John Warburton, Owens College, Manchester; Howard Francis Warner, Prelim. Sci., M.B. Lond., London Hospital; Walter Welchman, Prelim. Sci., M.B. Lond., Guy's Hospital; John Allen Robertson Wells, St. Thomas's Hospital; Stanley Martin Wells, Guy's Hospital; Charles Francis Orr White, B.A. Cantab., Cambridge University; Clifford Sidney White, University College, London; Ralph Osmond Williams, Guy's Hospital; William Wynne Williams, King's College Hospital; William Sugden Williamson, Yorkshire College, Leeds; David Wilson, Prelim. Sci. Lond., St. Thomas's Hospital; Murray Richard Osmond Wilson, University College, Bristol; Harold Douglas Wyatt, Guy's Hospital.

Anatomy only.—John William Wynne Hogan, Madras Medical College and St. Bartholomew's Hospital.

UNIVERSITY OF DURHAM.—At the third examination for the Degree of Bachelor in Medicine held in April the following candidates satisfied the examiners:—

Second-class Honours.—Reginald Bigg, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital.

Pass List.—Frederick Durnford Atkins, St. Thomas's Hospital; Frederick George Armstrong, College of Medicine, Newcastle-upon-Tyne; John Arthur Bell, St. Bartholomew's Hospital; Harold Linton Currie, College of Medicine, Newcastle-upon-Tyne; Margaret Douglas French, London School of Medicine for Women

William Gibbons and Alfred Herbert Heslop, College of Medicine, Newcastle-upon-Tyne; Walter Haward, St. Thomas's Hospital; Thomas Charles Hunter, College of Medicine, Newcastle-upon-Tyne; William Hughes, Edinburgh School of Medicine; William Henry Peacock and William John Phillips, B.Sc., College of Medicine, Newcastle-upon-Tyne; Donald Murray Ross, St. Thomas's Hospital; Mary Raw, Constance Charlotte Robertson, David Rees Roberts, Fred Stoker, and Andrew Smith, College of Medicine, Newcastle-upon-Tyne; Thomas Young Simpson, M.R.C.S., L.R.C.P., London Hospital; John Malcolm Shaw, College of Medicine, Newcastle-upon-Tyne; Otho Boyle Travers, Guy's Hospital; and William Frank Wilson, College of Medicine, Newcastle-upon-Tyne.

UNIVERSITY OF CAMBRIDGE.—At a congregation held on April 24th the following medical degrees were conferred:—

Doctor of Medicine.—H. B. Roderick, Emmanuel; A. C. Jordan-Sidney-Sussex.

Bachelor of Medicine.—F. H. M. A. Beckett, Selwyn Hostel.

UNIVERSITY OF EDINBURGH.—The following is the official pass-list at the recent professional examinations for degrees in medicine and surgery:—

First Professional Examination.—Mukhtar Ahmed, B.A., R. G. A. Bagnall, E. H. Black, C. E. Blair, George Blair, I. W. Breibner, S. T. Champtaloup (with distinction), W. I. M. Clark, Agnes M. Cowan, F. S. Cumming, Richard B. Davidson, A. M. Dick, M. G. Dill, A. M. Drennan (with distinction), Robert Duncan, James Dundas, E. W. Dyer, S. S. Dykes, Mary S. Finlayson, C. N. Finn, M. S. Fraser, W. G. Frohlich, G. F. Gallagher, W. J. Geale, Laurence Gibson, G. A. Gordon, M. C. R. Grahame, Joseph Green, J. C. Grieve, G. F. Grogan, George Gunn, Mary D. Hancock, A. J. Harper, A. S. Hendrie, H. S. A. Hogg, F. O. Inglis, R. F. Johnson, H. C. Johnston, W. L. Johnston, R. Lloyd Jones, Alexander M'Donald, D. F. Mackenzie, John B. Mackenzie, I. R. Macleod, George M'Mullan, A. C. B. M'Murtrie, W. J. MacNab, A. S. Mactavish, J. N. M'Turk, David Mann, G. M. Melville, Hugh Millar, F. C. Mills, B.A., John Morris, Janet M. Murray, J. K. Murray, R. H. Nolan, Ethel A. Olchard, J. S. Orwin, A. S. Paterson, H. B. Porteous, C. A. Purnell, G. Y. Richardson, W. H. Riddell, W. R. Ridley, W. G. Rivers, R. M. Robb, W. G. Robertson, Frank Ross, Alexander Sandison, James Scott, T. H. Scott, H. L. Sells, H. G. Smith, A. G. V. van Someren, H. V. Taylor, W. A. A. Taylor, J. A. R. Thompson, Annie D. Urquhart, V. S. Valiathan, B.A., Philip Vickerman, R. H. Walton, Andrew Wight, W. E. R. Williams, and J. T. D. Young.

Second Professional Examination.—R. G. W. Adams, E. A. Aylward, J. W. H. Babington, J. M. Barkley, R. B. Barnetson, Benjamin Baty, W. P. Beattie, Douglas Bell, L. H. I. Bell, A. R. Berrie, J. M. Beyers, A. S. L. Biggart, F. T. Bowerbank, David Brown (with distinction), T. E. Carlyle, V. T. Carruthers, Mildred M. L. Cathels, J. W. Cathles, G. S. Clark, M.A., A. G. Coullie, James Craw, W. B. Cullen, George Cunningham, W. H. Cusack, J. M. Darling, J. R. Dobbin, C. E. Dumanoire, T. H. Easton, N. C. Fischer, J. M. R. Flamet, N. C. Forsyth, R. H. Fothergill, Louis Fourie, A. N. Fraser, W. J. Fraser, Laurence Gavin, N. J. H. Gavin, H. M. Gillespie, A. G. Glass, M.A., William Godfrey, J. M. Graham, W. W. Greer, John Grieve, P. A. Harry, Ephraim Henderson, M.A. (with distinction), A. W. Hogg, Jean S. Hogg, R. B. Hole, G. S. Husband, K. U. A. Innes, Ada Jackson, William Jarvis, S. A. Johnston, J. H. H. Joubert, John Kirk, G. F. S. Landok, S. W. S. Leary, A. J. Lewis, James Lochhead, M.A. (with distinction), J. B. Lockerbie, A. D. M'Callum, John MacDonald, J. P. M'Gowan, M.A., H. R. Macintyre, R. J. Mackessack, Amy M. Mackintosh, D. P. Marais, Aimée E. Mills, M.A., B.Sc., L. S. Milne, T. B. Mouat, W. M. Mumby, D. S. Murray, Claude O'Flaherty, Archibald Oliver, C. D. O'Neal, E. G. S. Orbell, Garfield Ormrod, Florence M. S. Price, H. S. Reid, Margaret H. Robertson, Shiela M. Ross, C. S. Ryles, F. R. Sinton, L. H. Skene, C. J. Smith, G. M. C. Smith, W. A. Wilson Smith, R. A. L. van Someren, Patrick Steele, Hugh A. Stewart, A. C. Strain, K. A. Moody Stuart, Annie F. Theobalds, H. M. Thompson, Rose C. Townend, G. H. Usher, F. L. de Verteuil, R. W. L. Wallace, D. C. Welsh, D. P. D. Wilkie, F. A. Wille, W. B. Wishart, C. H. Wright and Margaret C. Young.

Third Professional Examination.—R. T. G. Aickin, Daniel Allison, J. A. anderson, W. W. Anderson, F. L. Atkinson, Agnes Balfour, C. M. Begg, A. W. Beveridge, T. C. Blackwell, John Brennan, Edith C. Brown, J. S. M. Brown, G. L. Brunton, Agnes Buchanan, Harry Caird, T. P. Caverhill, R. A. Chambers (with distinction), Katherine J. S. Clark, Elizabeth L. Colby, C. H. Craig, R. W. Craig, C. S. Crichton, D. M'K. Crooks, D. Halliday Croom, F. D. Crosthwaite, W. B. A. K. Cullen, Arthur Dangerfield, J. M. Darling, H. S. Davidson, James Davidson, W. H. Davison, D. E. Derry, A. C. Devereux, J. M. Dewar, James Donaldson, M.A., A. M. Dryden (with distinction), Alice M. Ebden, G. J. Farie, John Findlay, H. N. Fletcher, John Fortune, C. R. Gibson (with distinction), F. H. Gibson, J. D. Giles, James Girdwood, J. M. Glasse, Alexander Gray, M.A., Elizabeth C. Gunn, A. Mabel Gurney, A. A. Hall, M.A., C. R. F. Hartley (with distinction), G. W. Harty, George Henderson, A. E. Hodgson, A. F. Hughes, J. P. P. Inglis, J. M. Johnston, R. W. Johnstone, J. H. Jones, J. H. Kay, J. W. Keay, Ivan C. Keir, E. A. King, J. M. Kirkness, L. A. H. Lack, F. T. C. Linton, M.A., C. D. Lochrane, Isabella Logie, J. M. Lovett, Alexander Lundie, Henry MacCormac, J. R. M'Gregor, N. D. Mackay, T. A. MacKenzie, Violet C. M'Laren, William MacLaren, J. J. M'Millen, J. B. M'Neill, I. M. Macrae, H. C. Martin, R. H. Martin, P. W. Mason, A. G. M. Middleton, A. S. Millard, G. H. S. Milln, W. S. Milne, C. R. P. Mitchell, G. I. Moriarty, C. H. Muller, H. L. Munro, D. M'K. Newton (with distinction), Thomas Nicol, W. H. Nutt, D. D. Paton, M.A., Thomas Peebles, J. A. Pottinger, Julius L. Pringle, W. L. Pritchard, William Readman, Eva A. Robertson, W. Sibbald Robertson, Amy Robinson, L. C. Robinson, J. A. Ross, Mabel Ross, J. A. Roux, N. C. Rutherford, D. G. Addison Scott, D. J. Scott, J. E. Scott, M.A., W. M. Selby, G. H. Skinner, J. H. Smith, S. W. Smith, E. W. Smyth, Eva M. Snowball, Effie Stuart, John Tait, J. E. Taylor, T. T. Thomson, G. C. Trotter, E. A. Turpin, Robert Veitch, J. A. L. Wallace, W. R. S. Watkins, G. J. Wentzel, Leonard West, R. M. Manwaring White, C. H. Wright, B.A., W. D. Wright (with distinction), and G. W. Young.

Third Professional Examination (New Regulations—Pathology only).—Samuel Burns, M.A.

CONJOINT BOARD OF THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH AND THE FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—At the April meetings held in Glasgow the following candidates passed their respective examinations:—

First examination (five years' course).—Fred. Miller Murray, Glasgow; Frederick Barnes Elwood, Belfast; Andrew Ford Garrand, Glasgow; John Wm. Nelson Roberts, Wales; Frederic James Breakell, Preston; Evan Alan S. Shaw, Callao; and Edward Francis Nyhan, Dunmanway.

First examination (four years' course).—John Stothart Farries, Dumfriesshire; Alexander Jack, Co. Antrim; and George Munro MacLeod, Edinburgh.

Second examination (five years' course).—George Hart, Parkhead; Charles Chaves, Bombay; Archibald Frank Spinks, Partick; Alexander Robb M'Intyre Macliraith, Cathcart; William Wallace Dempster, Dublin; Samuel Robert Scott, Co. Down; Edward Ernest Murphy, Co. Cork; Evelyn Morris Franklin, Co. Cork; and Frederick Wm. March, Bradford.

Second examination (four years' course).—Adam Ardill, Co. Tipperary; and Joseph Edmund Mullan, Coleraine.

Third examination.—Alexander Allan, Dennistoun (with distinction); Robert Septimus Walker, Sunderland; Reginald Norman Macdonald, Buenos Ayres; William Robert Addison Coates, York; Harry Armstrong, West Hartlepool; John Bertram L. S. Scott, Manchester; Dennis Woolley Parkin, Cambridge; Lizzie Denny, Reading; and William Douglas Cockburn, Catrine.

Final examination (and admitted Licentiates of the three Colleges).—Henry Leighton Jones, New South Wales; Thomas Weir M'Cubbin, Glasgow; William Thomson, Glasgow; Edwin Norman de Vere Dawson, W. Kensington; Henry Solomon, Manchester; Stanley Lister G. D. Maclaine, Uddingston; Charles Vaughan Craster, Stevenage, Herts; William Henry Duncan, Maryhill; Hugh Williams, Talysarn, Wales; Terence Aloysius Welch, Dodington, Whitchurch, Salop; and Patrick Carroll, Kildonery, Co. Cork.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. E. Opitz has been recognised as *privat-docent* of Gynæcology, Dr. M. Ficker as *privat-docent* of Hygiene, Dr. Richard Henneberg as *privat-docent* of Neurology and Psychiatry, and Dr. K. Kaisering as *privat-docent* of Physiological Anatomy.—*Budapest:* Dr. Leo Liebermann has been promoted to the chair of Hygiene in succession to the late Dr. von Fodor.—*Jena:* Dr. H. Eggeling of Strasburg has been recognised as *privat-docent* of Anatomy.—*Lille:* Dr. Carlier has been appointed to the chair of External Pathology.—*Lyons:* Dr. Jaboulay has been appointed to the chair of Clinical Surgery.—*Naples:* Dr. C. Grossi has been recognised as *privat-docent* of Medical Pathology and Dr. Ceraso as *privat-docent* of Otology.—*Pavia:* Dr. G. Masnata of Palermo has been recognised as *privat-docent* of Operative Medicine.—*Philadelphia Polyclinic:* Dr. Geo. C. Stout has been appointed to the chair of Otology, in succession to Dr. Alex. Randall, resigned.—*Pisa:* Dr. Carlo Fedeli, Extraordinary Professor, has been promoted to the Ordinary Professorship of Medical Pathology; Dr. Baldi has been promoted to the Ordinary Professorship of Materia Medica and Pharmacology.—*Prague (Bohemian University):* Dr. R. Kimla has been recognised as *privat-docent* of Pathological Anatomy.—*Turin:* Dr. O. Modica has been recognised as *privat-docent* of Forensic Medicine.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Adolf Jarisch, Extraordinary Professor of Dermatology and formerly assistant to Professor Hebra in Vienna. His age was 52 years.—Dr. Heinrich Lahs, Extraordinary Professor of Gynæcology in the University of Marburg.—Dr. Crouzat, Professor of Clinical Midwifery in Toulouse.—Dr. Moritz Kaposi, Professor of Dermatology in the University of Vienna, at the age of 65 years. He was assistant to Professor Hebra and ultimately succeeded him. His publications on Dermatology are numerous and well known.—Dr. J. T. Metcalfe, formerly Professor of Medicine in the New York College of Physicians and Surgeons.—Dr. C. H. Burnett, Professor of Otology in Philadelphia.—Dr. Münde, Professor of Gynæcology in New York.—Dr. Christian Fenger, Professor of Surgery in the Rush Medical College, Chicago.—Dr. Boûqué, Professor of Surgical Pathology in the University of Ghent.—Dr. J. Lazarevich, formerly Professor of Midwifery, Gynæcology, and Children's Diseases in the University of Kharkoff. He died at St. Petersburg, aged 72 years.—Professor Ivan Balinski, formerly Professor of

Mental Diseases in the Medico-Chirurgical Academy of St. Petersburg.—Dr. G. Inzani, formerly Professor of Pathological Anatomy in the University of Parma.—Dr. Mott Moore, a well-known surgeon of Buffalo.—Dr. W. W. Johnston, formerly Professor of Medicine in the Columbian University, Washington.—Dr. Cushing, Lecturer on Gynæcology in Long Island Hospital, Brooklyn.—Dr. George M. Warner, Professor of Materia Medica and Therapeutics in the Louisville Medical College.—Dr. Josef Schöbl, Professor of Ophthalmology in the Bohemian University, Prague.—Dr. Robert, a Barcelona physician.—Dr. Bruzelius, formerly Professor of Pathology and Therapeutics in the Stockholm Medical School.

CHILDREN'S FRESH AIR MISSION.—The annual meeting of the Children's Fresh Air Mission was held in the great hall of the Charterhouse on April 29th, when the Master of the Charterhouse, the Rev. Dr. Haig Brown, presided. The report stated that last year 3293 children from very poor districts of London, chiefly Clerkenwell, St. Luke's, and Holborn, had been sent to the country for a week or more at a total cost of £2126. The parents themselves had contributed £464. The Bishop of Bristol, who proposed the adoption of the report, said that this mission, by giving children a taste of rural life, tended to help a movement which was absolutely necessary—a dispersion of London's overcrowded population into the country.

BARROW HOSPITAL. — Judge Parry's report concerning charges made against the management of the North Lonsdale Hospital was read at a meeting of the hospital council on April 16th. He found that the statements made to the guardians about a patient named Owens by Dr. D. H. Anderson were incorrect in fact. "Owens made statements to Dr. Anderson which the latter repeated in good faith," and "the hospital management did only what was correct" in the case. He stated also that the cases of delay in being seen by the house surgeon seemed to have been unavoidable "and there was no evidence that any of them had sustained injury by delay." As to two complaints of treatment, Mr. W. P. Montgomery of the Manchester Infirmary, the surgical assessor, reported that the treatment was correct. The honorary staff of the hospital considered that, except on comparatively rare occasions, there was no occasion for two house surgeons and the judge stated that Mr. Montgomery concurred with them, but he thought it advisable that the council should consider the matter. In the two cases referred to he stated that a night nurse had been reprimanded and that no blame attached to the council or house surgeon. In the second case there was a claim for wrong treatment by the house surgeon of which there was no evidence and the council "most unwisely" paid the man £15. In conclusion, the judge suggested that the council meetings should be held weekly instead of monthly and that the yearly accounts should be set out in greater detail. He said that "in his opinion the hospital is in every way efficient and the results of the treatment most creditable to the staff."

THE ROYAL INSTITUTION.—X Rays and Localisation formed the subject of the Friday evening discourse delivered at the Royal Institution on April 25th by Mr. J. Mackenzie Davidson. In speaking of the photographic use of the rays he said that the definition of a photograph taken with them depended on the relation of the cathode and the anti-cathode in the vacuum tube. The rays originated at the point where the cathode stream met a solid—namely, at the anti-cathode, but the anti-cathode did not stop all the stream, part of which passed on till it encountered the glass walls of the tube, when there was a further production of x rays, although of a less powerful quality. The rays therefore radiated from a comparatively large surface and the sharpness of the shadows was interfered with, but better definition could be obtained when the circumferential rays were intercepted by surrounding the tube with a compound of lead which could be scraped away at the point where it was desired that the rays should emerge. There were considerable differences between the effects produced on sensitive photographic surfaces by the x rays and by ordinary light. If the hand was laid upon a pile of six ordinary sensitive films the x rays would give a picture on each of them, the distinction between that on the uppermost and on the undermost film being very slight, and several such negatives might sometimes be combined when a positive was to be taken. If a plate was given a short exposure to ordinary light before a picture was taken on it with x rays no special effect was produced beyond some fogging of the plate but if the short exposure to ordinary light followed the taking of the x-ray picture the developed photograph was reversed. This curious phenomenon had been studied not only in this country but also by Professor Nephir in America. Mr. Davidson showed this experiment. The figure of a crown cut out in a flat piece of thin lead supported on a sheet of cardboard was laid on a sensitive plate contained in a light-proof envelope and an exposure of two minutes to the x rays was given. The plate was then completely uncovered and exposed to the ordinary illumination of the room for five minutes, after which it was developed and the figure of the crown was seen to be black on a light background. The method of photographing metallic objects embedded in the human body was also shown, as well as the "cross-thread localiser" for ascertaining the depth of penetration.

VACCINATION GRANT. — Mr. T. Messenger, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has received the vaccination grant as public vaccinator for Bowness district of the Wigton Union, Kirkbride, near Carlisle.

LITERARY INTELLIGENCE.—Messrs. Longman are about to issue a new work by Dr. G. V. Poore, entitled "The Earth in Relation to Contagia." This volume will include the Milroy Lectures of 1899, together with papers on the Sanitation of Camps, on the Disposal of Slop-water, and on Milk in Relation to Disease.

FRENCH HOSPITAL DINNER.—The thirty-fourth annual dinner in aid of the funds of the French Hospital in Shaftesbury-avenue took place on April 26th at the Hotel Cecil, the French Ambassador, M. Paul Cambon, being in the chair, supported by the Lord Mayor, the Belgian Minister (Baron Whetnall), the Swiss Minister (M. Bourcart), the Servian Minister, and other members of the diplomatic and consular services. The Chairman, in proposing the toast of the evening, mentioned in terms of regret that the hospital had lost a warm friend and devoted officer in the person of the late Sir William Mac Cormac, Bart., K.C.B., K.C.V.O., who was for so many years honorary surgeon to the hospital. He spoke highly of the services rendered by Mr. Edmund Owen and Dr. George Ogilvie, and he said that it was his pleasure for the fourth time to sing the praises of Dr. Vintras whose two children—the hospital and the convalescent hospital at Brighton—were now well on their feet. He added that the French Government had made a donation of 100,000 francs to the funds which he hoped would largely benefit by the fêtes which were shortly to be held at Earl's Court under the patronage of the Prince and Princess of Wales, thus enabling them to clear off their debts and to place the institution on a firmer basis. The musical programme, which was deferred until after the toast-list had been exhausted, comprised songs by Madame Hélène Palacek, Signor Umberto Salvi, Miss Florence Venning, and Mr. G. Hodgson, under the direction of Chevalier Tito Mattei.

Parliamentary Intelligence.

HOUSE OF COMMONS.

THURSDAY, APRIL 24TH.

Medical Provision in the Scottish Highlands.

MR. WEIR asked the Lord Advocate if he would state the number of parochial medical officers in each of the six crofting counties who did not possess the public health diploma required under the Public Health Act, 1897, and if he would state why the Local Government Board for Scotland continued to confirm the appointment of medical officers in Highland crofting counties regardless of the conditions imposed by statute.—The LORD ADVOCATE replied: The Secretary for Scotland is informed by the Local Government Board that the figures are as follows: Argyll County, 23 local medical officers, of whom three possess the statutory qualification; Inverness County, 10 local medical officers, of whom one possesses the statutory qualification; Ross and Cromarty, 11 local medical officers, of whom two possess the statutory qualification; Sutherland County, no local medical officers; Caithness County, no local medical officers; Orkney and Shetland, three local medical officers, none of whom possess the statutory qualification. The medical officers who do not possess the public health diploma were appointed prior to the coming into operation of the Public Health (Scotland) Act, 1897, and consequently do not require to possess the qualification. The Local Government Board does not recognise new appointments of medical officers who do not possess the statutory qualification.

Poor-law Nursing in Ireland.

Dr. E. C. THOMPSON asked the Chief Secretary to the Lord Lieutenant of Ireland if he was aware of the dissatisfaction which existed in Ireland with the qualifications required by the Local Government Board for district hospital nurses; and if he would appoint a small independent

committee to consider the question.—MR. WYNDHAM replied that he was prepared to consider the advisability of appointing such a committee, though he could not pledge himself to do so. The reforms which had been instituted by the Local Government Board had produced very satisfactory results and he would not like to do anything which would prejudice the work of the Board in this connexion.

The Conscientious Objector.

Two questions were addressed to the Home Secretary with regard to the action of magistrates at Beccles and Grimstone in refusing certificates of exemption to applicants who declared that they had conscientious objection to vaccination and in each case MR. RITCHIE said that he had no power to interfere.

FRIDAY, APRIL 25TH.

Medical Officers of Health.

On the motion of Sir FRANCIS POWELL a Bill was introduced and read a first time "to amend the law relating to the qualification and tenure of office of medical officers of health and inspectors and to make further provisions relating to superannuation allowances for such officers and inspectors, and for other purposes."

MONDAY, APRIL 28TH.

Ophthalmia and Ringworm in Poor-law Institutions.

MR. FLOWER asked the President of the Local Government Board if he could state the number of children at present suffering from ophthalmia and ringworm respectively in metropolitan Poor-law schools and institutions.—MR. LONG replied: According to the latest information in my possession the number of children suffering from ophthalmia and ringworm respectively was 413 and 325 in metropolitan Poor-law schools and 351 and 294 in metropolitan workhouses and infirmaries.

TUESDAY, APRIL 29TH.

London Water Charges.

MR. WEIR asked the President of the Local Government Board whether he was aware that the West Middlesex Water Company had quite recently raised its charges to consumers, and seeing that a Bill for dealing with the London water-supply was now before Parliament would he state whether any other metropolitan water companies had also raised their charges since the introduction of that Bill, and, if so, would he give their names.—MR. LONG replied: I am informed that from Christmas last the company referred to has reduced the rebate which since 1894 it has allowed on water charges from 10 per cent. to 5 per cent. The alteration is stated to have been rendered necessary owing to the payment which the company has to make to the City Chamberlain under its Act of 1894 and to increased rates and charges for labour and materials. Notice of the alteration was sent to the local authorities in the district on Nov. 1st and an explanation is printed on all the application papers. I am not aware whether any other of the metropolitan water companies have recently raised their charges.

Sickness on Board a Training-ship.

MR. ARNOLD-FORSTER, in reply to a question by MR. KEARLEY, said that there had been a considerable amount of sickness among the boys on board the training-ship *Impregnable* at Devonport. There had been an epidemic of scarlet fever in a mild form but he was glad to say that it was on the decline. In February last, in view of the presence of scarlet fever, a rigid inspection of the ship was made by the Inspector-General of Plymouth Hospital who reported that the sanitary conditions were in every way satisfactory and that disinfection was being carried out in a very efficient manner. The last case of scarlet fever occurred on April 21st, and in view of the decline in the number of cases and of the rigorous measures which had been taken to disinfect the ship it was hoped that the disease might have been stamped out. Should this prove not to be the case further measures would be taken for the protection of the health of the boys.

Disease in the Island of St. Kitts.

MR. PIRIE asked the Secretary of State for the Colonies if the inhabitants of St. Kitts had petitioned that prisoners of war should be confined there and if the Governor had supported that petition; and could he state if prisoners were confined there and if troops had been sent there to guard them; was he aware, according to the report issued from the London School of Tropical Medicine, that every third person in the island was suffering from filariasis which was an early stage of elephantiasis; and would this matter receive his attention in coming to any decision on the matter.—MR. CHAMBERLAIN, in reply, said: Some leading residents in St. Kitts have suggested that Boer prisoners might suitably be sent to that island, but the Governor has not endorsed the request and no prisoners or troops have been sent nor is there any present intention of sending them.

Cremation Bill.

The Grand Committee on Law met to-day for the consideration of the Cremation Bill, a measure designed to enable burial authorities to establish crematoria and to provide for the proper regulation of the burning of human remains. In Clause 4 an amendment was made requiring the site as well as the plans of a projected crematorium to be approved by the Local Government Board. As Clause 5 came before the Committee it proposed that no crematorium should be constructed nearer to any dwelling-house than 200 yards except with the consent in writing of the owner, lessee, and occupier of the house, and MR. H. D. GREENE moved to add to this the words, "nor within 50 yards of any public path or way nor in the consecrated part of the burial-ground of any burial authority." After some discussion the Committee accepted this addition to the clause. Clause 7 directs the Home Secretary to make regulations prescribing in what cases and under what conditions the burning of human remains may take place.—On the motion of MR. GREENE words were inserted in this clause requiring the Home Secretary to make regulations as to the disposition or interment of the ashes.—MR. JACOBY raised the question of the danger of poisoning cases escaping detection, and MR. JESSE COLLINGS, speaking as the representative of the Home Office, assured the hon. Member that in framing the regulations the department would keep this matter in view and require every possible precaution to be taken.—On the motion of MR. GREENE a new clause was inserted to secure that the incumbent of an ecclesiastical parish shall not, with respect to his parishioners or persons dying in his parish, be under any obligation to perform a funeral service before, at, or after the cremation of their remains.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number*

BOND, F. T., M.D. Lond., has been re-appointed Medical Officer o Health to the Tetbury Urban District Council.

BROUGH, DANIEL, M.B., C.M. Edin., L.R.C.P. Lond., M.R.C.S., has been appointed Deputy Medical Officer of Health for the Borough of Devonport.

BROWN, H., M.B., Ch.B. Vict., has been appointed Resident Obstetric Officer to the General Infirmary, Leeds.

BROWNE, A. E. N., L.R.C.P. & S. Edin., has been appointed Acting Visiting Surgeon, *pro tem.*, to the Gaol at Wagga Wagga, N.S.W.

CLARKSON, W., L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of Health to the Morpeth District Council.

DODGSON, H., M.B., Ch.B. Edin., has been appointed Senior Assistant Medical Officer to the Cumberland and Westmorland Asylum.

ELDER, J. B., M.B., Ch.B. Aberd., has been appointed Junior Assistant Medical Officer to the Cumberland and Westmorland Asylum.

GAMBLE, M. F., L.R.C.S. Edin., has been appointed Medical Superintendent, *pro tem.*, of the Ballarat Lunatic Asylum, Victoria, N.S.W.

HEARNE, W. W., M.B. Vict., has been appointed Public Vaccinator, *pro tem.*, for the North-Eastern Vaccination District of Victoria, N.S.W.

HINGSTON, CHARLES ALBERT, M.D., B.Sc. Lond., M.R.C.S., has been appointed Honorary Physician to the Crownhill Convalescent Home, near Plymouth.

HONMAN, ANDREW, M.R.C.S., has been appointed Certifying Medical Practitioner for the purposes of the Factories and Shop Acts at Williamstown, Victoria, N.S.W.

JONES, HERBERT, L.R.C.S. Irel., L.S.A., has been appointed Medical Officer of Health for the Bromyard Urban District.

LAIRD, ANDREW J., M.D., D.P.H., Assistant Medical Officer of Health for the County of Lanark, has been appointed Medical Officer of Health for the Borough of Crewe.

LEMARCHAND, ARTHUR WHARTON, L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Medical Officer to the North Devon Infirmary, Barnstaple, vice Dr. Mark Jackson, resigned.

LYNCH, PETER, L.R.C.P., L.R.C.S. Edin., has been appointed Certifying Medical Practitioner for the purposes of the Factory and Shop Acts at Carlton, Victoria, N.S.W.

MELLAND, CHARLES HERBERT, M.D. Lond., M.R.C.P., has been appointed Honorary Physician to the Ancoats Hospital, Manchester.

MUIR, W. C. C., M.B. Glasg., has been appointed Medical Officer of Health for the Shire of Alberton, Victoria, N.S.W.

MULLEN, W. L., M.D. Melb., has been appointed Medical Superintendent, *pro tem.*, to the Yarra Bend Lunatic Asylum, Victoria, N.S.W.

PARK, J. S., L.R.C.P. Lond., has been appointed Officer of Health for the Shire of Cranbourne, Victoria, N.S.W.

PRIPERS, F., M.D. Berl., has been appointed Officer of Health for the Shire of Kerong, Victoria, N.S.W.

STEVENSON, ROBERT, M.D., has been appointed Medical Officer of Health to the Bootle Postal District.

TIPPETT, SYDNEY G., M.B. Lond., has been appointed Assistant Surgeon to St. Bartholomew's Hospital, Chatham.

TURNER, A. F., L.R.C.P., L.R.C.S. Edin., has been re-appointed Medical Officer of Health to the Tewkesbury Corporation.

WALLACE, J. SIM, M.D., D.Sc., L.D.S. Eng., has been appointed Honorary Dental Surgeon to the West End Hospital for Diseases of the Nervous System.

WILLIAMSON, R. T., M.D., F.R.C.P. Lond., has been appointed Honorary Assistant Physician to the Manchester Royal Infirmary.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Resident Surgical Officer. Salary £100 per annum, with apartments, board, and attendance.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL, Edmund-street.—Surgeon.

BRADFORD ROYAL INFIRMARY.—Junior House Surgeon, unmarried. Salary £50 per annum, with board and residence.

CANCER HOSPITAL, Fulham-road, S.W.—Junior House Surgeon. Salary at rate of £70 per annum, with board and residence.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Registrar. Honorarium of 20 guineas per annum.

CORNWALL ROYAL INFIRMARY.—House Surgeon (unmarried). Salary £100, increasing, with board and apartments.

DUDLEY, THE GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £40 per annum, with residence, board, and washing.

FISHERTON ASYLUM, Salisbury.—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and washing.

HOSPITAL FOR DISEASES OF THE THROAT, Golden-square, W.—Senior Clinical Assistant.

HOSPITAL FOR WOMEN, Soho-square.—Clinical Assistantships.

KENT COUNTY ASYLUM, Barming Heath, Maidstone.—Fourth Assistant Medical Officer and Pathologist, unmarried. Salary £175 per annum, rising to £200, with quarters, attendance, &c.

KINCARDINE, ROSS-SHIRE, PARISH COUNCIL.—Resident Medical Officer. Salary £72 10s. as Medical Officer and £5 per annum as Vaccinator, with lunacy fees in addition.

KINGS NORTON AND NORTHFIELD URBAN DISTRICT COUNCIL AND INFECTIOUS DISEASES HOSPITAL.—Medical Officer of Health and Medical Superintendent. Combined salary £500 per annum.

LIVERPOOL, DAVID LEWIS NORTHERN HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with board and residence.

LIVERPOOL STANLEY HOSPITAL.—Senior House Surgeon. Salary £100 per annum, with board, residence, and washing; also Third House Surgeon. Salary £70 per annum, with board, residence, and washing.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer. Salary £80 per annum, with board, attendance, and washing, and prospect of re-election as Senior (salary £100).

NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Honorarium £20, with board, lodging, and washing.

NORTH-WEST LONDON HOSPITAL, Kentish Town-road.—Resident Medical Officer. Also Assistant Resident Medical Officer, each for six months. Salary at rate of £50 per annum, with board, residence, and washing.

ROYAL ALBERT HOSPITAL, Devonport.—Resident Medical Officer. Salary £110 per annum, with board and lodgings.

ST. GILES, CAMBERWELL, WORKHOUSE, Constance-road, East Dulwich.—Locum Tenens for the Medical Officer for four weeks. £4 4s. per week, with board and residence.

ST. MARY'S HOSPITAL, Paddington.—Surgeon-in-Charge of Out-patients.

SEAMEN'S HOSPITAL SOCIETY, Greenwich.—Surgeon; also Honorary Anæsthetist.

SUFFOLK GENERAL HOSPITAL.—House Surgeon. Salary £100 a year, with board, lodging, and washing.

TOTTENHAM HOSPITAL.—House Surgeon. Salary £50 per annum, with board, residence, and laundry.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £125 per annum, with board, apartments, and attendance.

WANDSWORTH AND CLAPHAM UNION, HOME FOR AGED AND INFIRM, Church-lane, Tooting.—Assistant Medical Officer, unmarried. Salary £100 per annum, rising to £120, with apartments, board, and lodging.

WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Second House Surgeon, unmarried. Salary £80 a year, ith board, residence, and laundry.

WEST RIDING ASYLUM, Wakefield.—Pathologist and Assistant Medical Officer. Salary £140, rising to £160, with apartments, board, washing, and attendance.

WEYMOUTH AND MELCOMBE REGIS URBAN DISTRICT COUNCIL.—Medical Officer of Health. Salary £300 per annum.

WIGAN INFIRMARY.—Junior House Surgeon. Salary £80 per year, with apartments and rations.

WORCESTER GENERAL INFIRMARY.—House Physician, unmarried. Salary £70 per annum, with board, residence, and washing.

Births, Marriages, and Deaths.

BIRTHS.

BUZZARD.—On April 28th, at Grosvenor-street, W., the wife of E. Farquhar Buzzard, M.B. Oxon., M.R.C.P. Lond., of a son.

JACKSON—On April 24th, at Carntyne, Hexham, Northumberland, the wife of John A. Jackson, M.D. Glasg., of a son.

LEMON.—On April 28th, at Burnt Ash-road, Lee, Kent, the wife of Edward Henry Lemon, M.R.C.S., L.R.C.P. Lond., of a son.

RUBEL.—On the 18th inst., at the Red House, River, Dover, the wife of J. L. Rubel, M.R.C.S., of a daughter.

MARRIAGES.

BOTHWELL—STUMKE.—On Thursday, March 27th, at Bulawayo, by the Rev. J. G. Aldridge, George Granville Bothwell, M.B., C.M. University Aberdeen, eldest son of the late G. G. Bothwell, M.R.C.S., L.R.C.P., of Topsham, Devonshire, England, to Stella, eldest daughter of Charles August Stumke, of Uitenhage, Cape Colony.

CARRE—MONTGOMERIE-FLEMING.—On April 23rd, at St. Mary's Episcopal Church, Glasgow, Henry Carre, L.R.C.P., L.R.C.S. Irel., to Elisabeth Tennent, eldest daughter of the late J. B. Montgomerie Fleming, of Kelvinside.

COBBLEDICK—WHITTON.—On April 24th, at St. Luke's Church, W. Hampstead, London, N.W., by the Rev. J. Salwey, Arthur Stanbury Cobbledick, M.D., B.S. Lond., M.R.C.S., L.R.C.P. Eng., second son of John Osborn Cobbledick, of Lyndhurst, Clifton, Bristol, to Jessie, the fourth daughter of William Whitton, of Springfield, Stradbally, Queen's co., Ireland.

FELCE—FENEMORE.—On April 24th, at Widcombe Church, Bath, Stamford Grant Felce, M.A., M.D., B.C. Cantab., to Edith, daughter of the late John Fenemore, of Alcester.

LEWIS—SYMES-THOMPSON.—On April 22nd, at St. George's, Hanover-square, Ernest E. Lewis, M.D. Brux., to Lilian, elder daughter of Dr. E. Symes-Thompson.

DEATHS.

CHRISTY.—On the 27th inst., at 21, Princes-chambers, Hanover-square, W., William Beresford Chambers Christy, M.D., late R.N., aged 77 years. Colonial papers please copy.

FINLEY.—On April 27th, at West Malvern, John Edward McKelvie, the son of Harry Finley, M.D. Lond., aged 13 weeks.

GERARD.—On April 8th, at Perth, of acute phthisis, John Gerard, M.A., M.D. Aberd., M.R.C.P. Lond.

KIRBY.—On the 4th March, at his residence, Cerne Abbas, Bournemouth, Edmund A. Kirby, M.D., in his 78th year, dearly loved and deeply mourned.

N.B.—A fee of 2s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE "Y" FUND.

SURGEON-GENERAL H. S. MUIR begs to acknowledge, with thanks, donations towards the "Y" Fund from Lord Rothschild, Sir William H. Broadbent, Bart., K.C.V.O., Sir Thomas Smith, Bart., K.C.V.O., Surgeon-General and Mrs. J. B. Hamilton, Colonel and Mrs. Clibborn, Mrs. Percy E. Cox, Mrs. Munkittrick, Mrs. Charters Symonds, "A Lady" (through Lieutenant-Colonel Drake-Brockman), Mr. Howard Marsh, Sir James R. D. McGrigor, Bart., Mr. R. A. Biss, Dr. J. E. Squire, Surgeon-Lieutenant J. J. Crean (retired), Lieutenant-Colonel J. H. Reynolds, V.C., A.M.S. (retired), Lieutenant-Colonel W. Babtie, C.M.G., V.C., R.A.M.C., Lieutenant-Colonel J. Anderson, R.A.M.C., Lieutenant-Colonel Emerson, R.A.M.C., and Major W. B. Leisham. It may be explained that this is in response to an appeal made privately to members of the profession for benevolent aid in a distressing case which has been described in a letter sent to a limited number of medical men (who would help the cause by kindly "handing on" to *confrères*). Should any reader of THE LANCET desire further particulars with a view to expressing *practical sympathy*, a copy of the letter will be forwarded on application to Surgeon-General Muir, 26, Kensington-gardens-terrace, Hyde Park, London, W.

THE PREHISTORIC REMAINS RECENTLY ACQUIRED BY THE BRITISH MUSEUM.

To the Editors of THE LANCET.

SIRS,—In an interesting letter under the above heading in THE LANCET of April 26th, p. 1223, Mr. N. Stevenson gives several points worthy of notice; one especially may be enlarged upon. He says: "The dried body is shown just as it was found lying on its left side, with its thighs doubled up under it, in an exact model of the grave, with all its neolithic flint instruments, &c., *in situ*." There can be no doubt that originally the body was placed in the sitting posture as is so often found in prehistoric burial-places, but had lost that position from gravitation. Many bodies were even tied into that doubled-up posture and buried sitting. In other words, in the same position as the human body is in the uterus or womb until within a short time before birth. May we not, then, infer that prehistoric man placed his deceased brother in the tomb or second womb in that same position ready for the second birth or resurrection and credit them with a religious belief, further substantiated by the implements, &c., found entombed with them?

I am, Sirs, yours faithfully,

April 29th, 1902. R. HENSLOWE WELLINGTON.

A REVOLVING SHELTER FOR PHTHISICAL AND OTHER CASES.

Sanitation writes:—"Could you obtain for me through the medium of the correspondence column of THE LANCET information as to the best class of 'revolving shelter' for phthisical and other cases, with a reference to any existing shelters of this class in English sanatoriums?" Our correspondent is in charge of a highly important public institution and we shall be obliged to anyone who can give him the information that he seeks.

MAXIMA DEBETUR MORTUIS REVERENTIA.

WE have all heard of the American ladies whose sense of modesty was such that they clothed the legs of their tables and chairs in nether garments. The following occurrence at one of the great London hospitals is illustrative of feeling every whit as nice. A cold storage chamber was being constructed in connexion with the post-mortem room and the secretary of the hospital, on going to see how the work was getting on, found that the chamber was being fitted with double doors—and those of small size—instead of one large door. He made inquiries as to the reason for this deviation from the original plan, when the chief carpenter, who was superintending the work, replied: "Oh, sir, we are putting in double doors and a wooden partition in order to keep the sexes apart"!

FOREIGN MEDICAL LITERATURE.

To the Editors of THE LANCET.

SIRS,—Could any of your readers give me the names of the leading German and Austrian medical weeklies and monthlies—those corresponding to THE LANCET and the *American Journal of the Medical Sciences*? Who are the leading medical booksellers of Berlin and Vienna?

I am, Sirs, yours faithfully,

April 26th, 1902. NORTHERN READER.

ACUTE LUMBAGO.

To the Editors of THE LANCET.

SIRS,—I beg to bring before your readers a treatment which I have adopted in this common disease and which I have no hesitation in saying will give relief quicker than the usual belladonna liniments or plasters. The patient is put in bed and is surrounded with blankets. The bowels are cleared out by giving a saline purge, followed by a mixture of salicylate of soda, bicarbonate of potassium, and wine of colchicum. Then a compress is made by taking a piece of mackintosh

18 by 10 inches, to this being fixed two layers of flannel 16 by 8 inches; these are stitched to a broad flannel bandage, or, what is better, the compress is fastened to the inner surface of a pair of pants, the pad having been soaked in a strong solution of salicylate of soda (one drachm to one ounce). This is kept applied to the lumbar region. Next an indiarubber bottle filled with boiling water is placed against the loins. From personal experience I can recommend this treatment to any of my medical brethren should they unfortunately suffer from this very painful complaint.—I am, Sirs, yours faithfully,

April 29th, 1902. M.D.

P.S.—The diet should consist of milk and milk puddings, with plenty of lithia water to drink.

THE ETIOLOGY OF BALDNESS.

MANY are the causes of baldness. In THE LANCET of April 5th, p. 983, we drew attention to some recent suggestions issued by the New York Board of Health as to greater precautions against septic infection in the appliances used by hairdressers. Dr. A. R. Reynolds, Commissioner of Health of Chicago, has expressed in the *Chicago Tribune* his doubt of the importance of microbic infection in causing baldness and he lays stress on the harmful effect on the hair produced by the pressure of the ordinary hat. There is much to be said in favour of this theory, for the pressure of the hat on the scalp is often shown by the redness produced. Yet few dermatologists will admit that such pressure is the sole or even the chief cause. Baldness frequently extends backwards beyond the line of pressure of the hat, and nowhere does the margin exactly coincide with the edge of the hat. Before hats were worn baldness existed. To quote only one instance, Julius Cæsar is said to have been very bald, and he certainly did not wear a hat. Nevertheless anything that interferes with the nutrition of the scalp must favour the action of harmful micro-organisms, and therefore tightly-fitting hard hats will certainly hasten the loss of the hair of the head.

FILTHY ADVERTISEMENTS.

To the Editors of THE LANCET.

SIRS,—A long time back I sent you some papers and pamphlets I received from some filthy beast advertising in the *Weekly Times and Echo*. Someone, I do not know whom, has sent me another copy of the same paper in which I see the same advertisement still appearing. I send it on to you. I know you have done a vast amount of good in stopping many papers from advertising such abominations, and it is to be hoped that before long it will be punishable for them to do so.

I am, Sirs, yours faithfully,

Denman Island, B.C., Canada, April 9th, 1902. G. D. B.

TO THE MARRIED,

and THOSE INTENDING to MARRY of Both Sexes.

Read carefully my new book, which treats Every Branch of this Delicate Question of Large Families, with a check as commended by an eminent London Physician. Send Postal at once Order for 1s. 6d., with address plainly written, to Mr. WILTON DOUSE, Science Demonstrator, 7, The Chase, Nottingham.

A New Edition, in sealed packet, for 1s. 6d.

PROPOSED MEMORIAL TO THE LATE SURGEON-GENERAL W. NASH, A.M.S.

THE following subscriptions have been received since the last notification:—

	£	s.	d.
Lieutenant and Quartermaster J. Gillman ...	0	5	0
Captain F. E. Gunter, R.A.M.C.	0	10	0
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Previously acknowledged in THE LANCET	68	13	6
Total	£78	13	6

MEDICINE IN ANTIQUITY.

IN a recent volume of the Berlin classical journal *Hermes*, a learned German, Herr Wellmann, has been giving some notes upon the History of Medicine in Antiquity, and with Teutonic fervour has suggested as fully ascertained facts the following statements with regard to certain medical authors which we give, shortly summarising Herr Wellmann's views, for what they are worth. Speaking of Athenæus, who it will be remembered gives an account of being present at a Roman banquet with Galen as another of the guests, he says: "The medical citations in his book I. to III. are derived from some critic of Hippocrates, which critic flourished before Varro but subsequently to Hikesius, as his views upon wine and water indicate. This must have been Heraclides of Tarentum, whose 'Symposium' was a compilation of rules for eating and drinking."

Chrysippus, the pupil of Eudoxus, whose books, now lost, are frequently quoted by Galen, speaks of curing the spitting of blood by binding the limbs to prevent inflammation. This shows that he knew Praxagoras's theory that the veins contained the blood, the arteries only air. Chrysippus's information as to the observation of fever by means of the pulse is also from Praxagoras. Herr Wellmann says that Chrysippus flourished therefore about 300 B.C., but that is the date which British scholars previously assigned to him. His famous pupil, Erasistratus, was physician at the Court of the Ptolemies. He was supposed to have been previously at the Syrian Court of Seleucus Nicator and there cured the young Antiochus, but Herr Wellmann shows that it was his father Cleombrotus who achieved this. Another German writer, Dr. von Oefele, has now for many years devoted much time to the study of the medical knowledge of the ancient Babylonians, Assyrians, and Egyptians. The vastly improved interpretations of the languages and writings of these peoples have now made such an undertaking more profitable than it could have been a quarter of a century ago. The result of Dr. von Oefele's investigations in the Asiatic kingdoms is incorporated in the first volume of Neuburger's and Pagel's "Handbuch der Geschichte der Medizin," where many cuneiform prescriptions and medical matters are dealt with. He has also fully described one branch of Egyptian medicine in the fourth volume of the "Archives de Parasitologie." It is well known what an important place among diseases those due to parasites occupy in Egypt and they appear to have been equally prevalent in ancient times.

INCONTINENCE OF URINE.

To the Editors of THE LANCET.

SIRS,—I recently saw in THE LANCET a prescription recommended for incontinence of urine consisting of benzoate of soda, &c. Being in charge of the "incontinent" hut here I tried it on all my "incontinent" patients for some time without the slightest effect. A discussion took place among medical officers here concerning the strength of liquor opii sedativus, some quoting Martindale and Westcott, ninth edition, in favour of its being the same strength as tinctura opii—e.g.: "Extract of opium ..... is of same strength as tincture of opium ..... Resembles Battley's liq. opii sedativus." On the other hand, "Squire" says that it is "say 50 per cent." stronger than tinctura opii. Which is correct? I am, Sirs, yours faithfully,

CIVIL SURGEON.

Connaught Hospital, Aldershot, April 29th, 1902.

*** Liquor opii sedativus is Battley's solution. The liquid extract of opium and the tincture of opium are, according to the latest edition of the British Pharmacopœia, of the same strength as regards morphine—i.e., they should contain 0·75 of a gramme of morphine in 100 cubic centimetres. Probably when "Martindale" says "resembles," it is implied that Battley's solution is made from extract of opium instead of opium and with water instead of spirit in the same way as the liquid extract of opium is made.

WANTED—A HOME.

To the Editors of THE LANCET.

SIRS,—Could you or any of your readers inform me whether there is any hospital or sanatorium (by preference in the Midlands) where a working-man could be immediately taken in for open-air treatment for phthisis? His employers would be willing to pay a guinea a week (if necessary perhaps a little more) for maintenance.

I am, Sirs, yours faithfully,

O. F. FROHWEIN.

43, Lichfield-street, Burton-on-Trent, April 29th, 1902.

THE ROENTGEN RAYS IN CANCER.

To the Editors of THE LANCET.

SIRS,—I should be glad if you or any of your readers could give me any information as regards institutions where the effect of Roentgen rays has been tried in cases of cancer unfitted for operation and the addresses and terms of such institutions.

I am, Sirs, yours faithfully,

April 28th, 1902. M.R.C.S.

Justice.—The members of the club in question are not persons who ought to obtain their medical attendance at such a price as 1d. per week or less. Grocers, publicans, butchers, naval pensioners, &c., should be able to pay their medical man properly and their presence on the lists of this amalgamation forms a good argument for the institution of a wage-limit. In answer to the particular questions: 1. It does not seem to us to matter whether the committee which has written so ignorantly and contemptuously concerning the medical profession considers itself badly treated or not. 2. The medical men would be justified in resigning their posts and in endeavouring to prevent other medical men from accepting them. We shall be happy to second their endeavours. 3. The salaries quoted are the usual ones. They are calculated at the lowest rate and account for the "ambition of young medical practitioners" to cut themselves free from such lay organisations.

M.R.C.S., L.R.C.P.—We do not think that the druggist's proceeding can be construed as an infringement of the Medical Act.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received:—*Torquay Times, Midland Express, Aberdeen Free Press, Weekly Free Press (Aberdeen), Bristol Mercury, Madras Journal, Reading Mercury, Mining Journal, Hertfordshire*

Mercury, Local Government Chronicle, Sanitary Record, Nuneaton Chronicle, Derbyshire Courier, Surrey Advertiser, Local Government Journal, Carpenter and Builder, Rotherham Express, Liverpool Daily Post, Sunday Times, Journal of Tropical Medicine, Westminster Gazette, Knowledge, Broad Arrow, &c.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, May 1, 1902.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
April 25	30·04	N.	....	115	69	47	49	53	Foggy
,, 26	29·84	E.	....	95	56	45	45	48	Overcast
,, 27	29·92	E.	....	115	57	47	45	47	Cloudy
,, 28	30·09	E.	....	104	56	46	42	48	Cloudy
,, 29	30·19	E.	....	80	53	38	42	46	Cloudy
,, 30	30·00	S.W.	....	88	58	44	46	48	Cloudy
May 1	29·67	N.W.	0·01	102	58	48	47	51	Cloudy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.) West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (6th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.).

WEDNESDAY (7th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.).

THURSDAY (8th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.).

FRIDAY (9th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square, (9.30 A.M.), City Orthopædic (2.30 P.M.).

SATURDAY (10th).—Royal Free (9 A.M. and 2 P.M.), London (2 P.M.) Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.), Throat, Golden-square (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (6th).—PATHOLOGICAL SOCIETY OF LONDON (Middlesex Hospital, W.).—8 P.M. Laboratory Meeting. Dr. Klein: A New Pathogenic Bacterium.—Mr. T. J. Bokenham: The Action of High Frequency Currents on Bacteria.—Mr. A. G. R. Foulerton and Dr. A. M. Kellas: The Action of High Frequency Currents on Bacteria.—Dr. A. F. Voelcker: A Case of Aneurysm of the Heart.—Dr. C. Thomson: A Case in which a Hat-pin remained embedded in the Heart during Life.—Mr. L. Milburn: An Epidemic simulating Tuberculosis in Guinea-pigs.—Mr. N. B. Harman: A Method of Demonstrating the Track of Bullet Wounds of the Brain.—Dr. Seligmann: The Inhibitory Action on Bacteria of the Fluid from Charcot Joints.—Mr. H. J. Curtis: Specimens showing the Results of Experimental Yeast Infection.

WEDNESDAY (7th).—OBSTETRICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M. Specimens will be shown by Mr. A. Doran, Dr. McCann, Dr. R. Vincent, and others. Paper:—Dr. J. S. Fairbairn: Five Specimens of Fibroid Tumour of the Ovary, with Observations on their Pathological Anatomy.

THURSDAY (8th).—BRITISH GYNÆCOLOGICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Specimens will be shown by Prof. A. Smith, Dr. H. Macnaughton-Jones and others. Paper:—Dr. B. Fenwick: Fifty Laparotomies.

HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road, W.).—8.30 P.M. Discussion on the Early Diagnosis of Specific Fevers (opened by Dr. Sidney P. Phillips).

FRIDAY (9th).—ANATOMICAL SOCIETY OF GREAT BRITAIN AND IRELAND (Charing Cross Hospital Medical School).—4.30 P.M. Papers by Dr. J. M. H. MacLeod and Dr. M. Tims. Preparations by Dr. A. Keith, Dr. C. Addison, Mr. B. J. A. Moynihan, and Mr. F. W. Jones.

CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Papers:—Mr. W. G. Spencer: Congenital Diffuse Lymphangioma terminating in Lympho-sarcoma in a Child aged four years.—Mr. G. Turner: Sarcoma of the Ankle Joint.—Mr. C. B. Lockwood: Sarcoma of the Synovial Membrane.—Dr. W. Ewart and Dr. I. Owen: A Case illustrating the Clinical Features of "Horizontal" Dilatation of the Left Auricle.—Dr. I. Owen: "Horizontal" Dilatation of the Left Auricle.—Dr. W. Ewart: A Note on Palpable Systolic Intercostal Pulsation in a Case of Mitral Stenosis with Dilatation and Thrombosis of the Left Auricle.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (5th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. F. Payne: Clinique. (Skin.)

TUESDAY (6th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. C. T. Williams: Clinique. (Medical.)

WEDNESDAY (7th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson, jun.: Clinique. (Surgical.)

THURSDAY (8th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.)

CHARING-CROSS HOSPITAL.—4 P.M. Dr. Green: Cases in the Wards. (Post-Graduate Course.)

FRIDAY (9th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. M. Gunn: Clinique. (Eye.)

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It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

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An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice, but is in itself an *additional* advertisement.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to Advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department in France—J. ASTIER, 8, Rue Traversière, Asnières, Paris.